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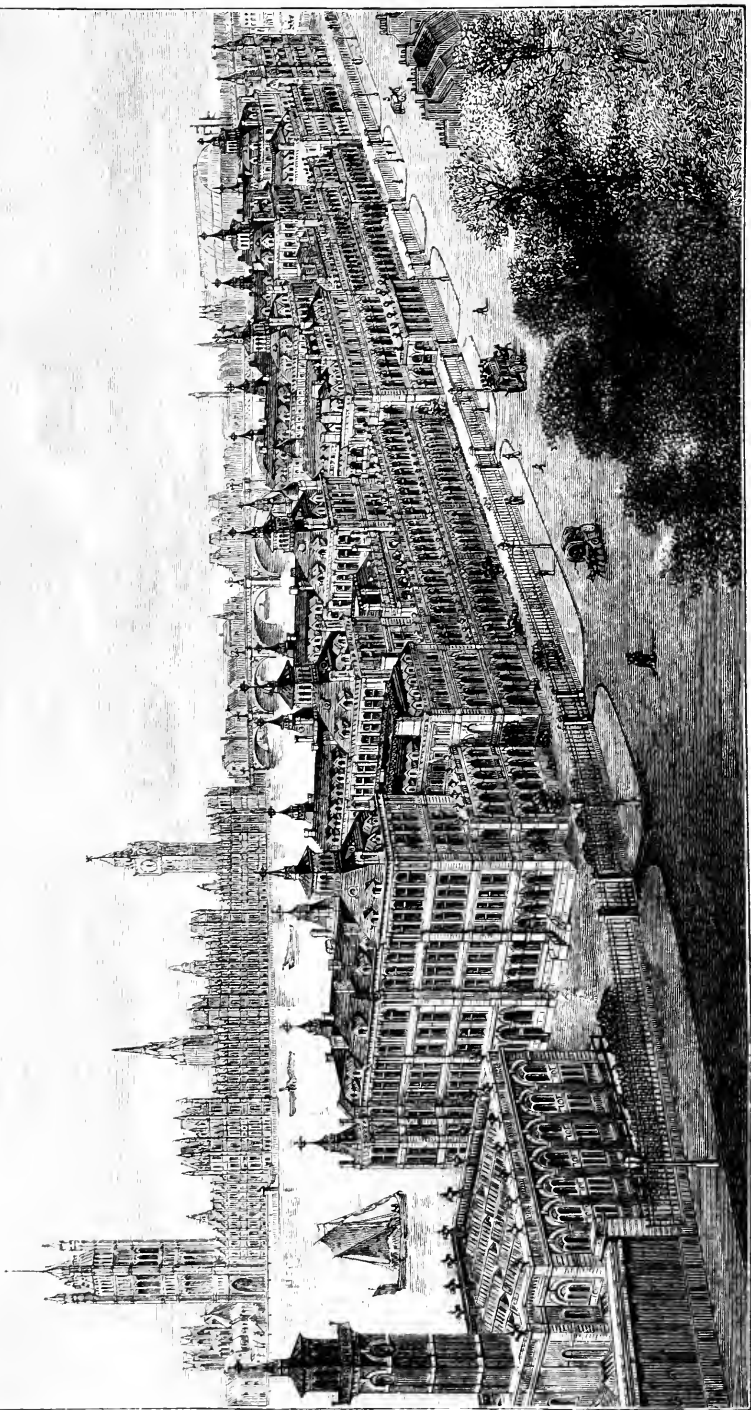
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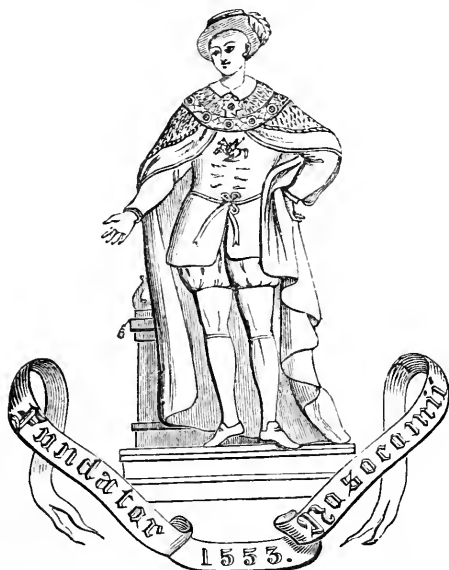
VIEW OF ST. THOMAS'S HOSPITAL FROM THE SOUTH-EAST.

SAINT
THOMAS'S HOSPITAL
REPORTS.

New Series.

EDITED BY

DR. SEYMOUR J. SHARKEY AND MR. FRANCIS MASON.



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ON SOME
CLINICAL ASPECTS OF GLYCOSURIA.

By WILLIAM M. ORD, M.D.

IN the year 1865, a gentleman whom I had long known came to me complaining of preputial irritation. His prepuce was thickened, somewhat rigid, somewhat transparent, and slightly eczematous. He stated, on being questioned, that he thought he had been passing an increased quantity of urine for some months. The urine was at once examined. It was of specific gravity 1035, contained much sugar and no albumen. Subsequently the quantity was measured, and was found to range between sixty and eighty ounces a day. The patient was then sixty-seven years of age. He was a hale man, of powerful frame; was prosperous, but still regularly attending to business; was temperate in eating and drinking; and was not conscious of any failure of strength, or of any reason to seek medical advice, save the state of the prepuce. He came of a very strong stock. His father had been a vigorous man until nearly seventy years of age, when he died after an operation for strangulated hernia. His mother had lived to the age of ninety. The collateral branches all showed toughness and vigour.

The patient himself had been, however, subject to excessive mental strain by the illness of his wife, who had been for some years on the borders of insanity, and had been at times

under restraint at home for many weeks together. He admitted that besides the effect of grief for his wife's condition, he felt constantly oppressed by the responsibility of restraining her.

Treatment was at once commenced. He was placed on restricted diet, comprising as the only hydrate of carbon toasted brown bread in small quantity; and some compound spirit of ammonia with tincture of opium was prescribed. I watched him for three years, but never failed to find much sugar in the urine. Under the strict diet the quantity of sugar and of urine decreased, but though the quantity of urine then remained but little larger than the average, the sugar diminished less in proportion. I now lost sight of him as a patient, but heard from time to time that his urine remained unchanged, and that though he showed some increasing infirmity, such as would be warranted by his age, he had none of the symptoms usually associated with diabetes. In 1872 he began to be decidedly ill with symptoms of Bright's disease, and in February, 1873, eight years after the first examination, his age being now seventy-five, I was called to see him in consultation with his ordinary medical attendant. He was now in the last stage of emaciation and exhaustion, with anasarca, sloughing tonsils, rigid arteries, and albuminuria. The urine, of sp. gr. 1037, was acid, gave a strong sugar reaction, and contained, besides albumen, an abundance of long straight rigid casts. There was also a copious deposit of uric acid in agglomerations of flat, beautifully crystalline plates. He died three weeks later. The urine passed the day before death was of specific gravity 1035, and gave a full sugar reaction.

I have two interesting particulars to add. His eldest son, a man of about fifty, more corpulent than his father, less careful in his diet, but a man of great physical strength, suffers from glycosuria and albuminuria, and has passed uric acid calculus from the kidney. The son might be expected to have glycosuria from the second particular, namely, that the widow suffers from the same malady, but in an intermittent form. There are two other sons and two daughters surviving. As far as I know none of these present glycosuria. A son and a daughter have died, after reaching adult age, of phthisis.

The above case, which I have related as briefly as possible, may be taken as a specimen of a form of diabetes distinctly

recognised by all the authors of treatises on the subject. Prout,¹ for instance, who defines "diabetes to be a disease in which a saccharine state of the urine is a characteristic symptom," expressly argues that from a practical point of view diabetes ought always to be considered in a two-fold light, as a simple saccharine condition of the urine without any increase in its quantity, and as complicated with a preternatural flow of that secretion.²

And the writers after Prout have all recognised the existence of a glycosuria occurring in the aged, the dyspeptic, and the gouty, which is not associated with any noticeable excess of urine, which is not attended with the general symptoms of typical diabetes, and which may go on for years without deeply affecting the health of the patient. Dr. Dickinson uses the term hepatic glycosuria for a part of the members of this group, and Dr. Lauder Brunton the term gouty glycosuria for another.

The remarks which I have to make will be in illustration of this non-diabetic form of glycosuria.

Besides the case I have related, I find in my note-book records of twenty-two cases of glycosuria occurring in persons aged fifty years and upwards, of glycosuria not accompanied by any marked diuresis, but nevertheless persistent in some degree under all forms of treatment. The list therefore excludes the mention of the temporary glycosuria which may be observed in persons of all ages under the influence of certain passing provocations.

It may first be stated that the list comprehends but two women, and that the ages of the subjects range between fifty and eighty-four. On review of the cases it is impossible in any one of them to see glycosuria assuming the individual importance which it claims in typical diabetes mellitus. On the contrary, it is reduced to the rank of a symptom of other troubles. And in this reduction lies, to my mind, the value of the observation of the series of cases.

Glycosuria is here indicated as associated with four conditions of importance:

1. Preponderantly, conditions of nerve disease or disorder, appearing either as probable causes or as associated troubles.
2. Gout.

¹ 'Stomach and Urinary Diseases,' 1840, p. 26.

² *Id.*, p. 40.

3. Errors of diet, consisting in over-eating and over-drinking.

4. Albuminuria.

1. In twenty cases there were marked indications of nerve disease or disorder.

Seven patients, nearly one third of the total, told a story of excessive and prolonged mental work or anxiety preceding the recognition of glycosuria.

In one, after much emotional excitement, insanity was at last fully declared.

In one, after a long course of strenuous mental labour, scarcely intermitted through the nights of many years, hemiplegia occurred, and apoplexy ended the chapter.

Apoplexy occurred suddenly in another case.

In two distinct locomotor ataxy existed, and in a third the ataxy was present with signs of affection of the whole breadth of the spinal cord.

Decided hypochondriasis was noted in two. One of these was haunted by the dread of syphilitic disease, but manifested no signs thereof whatever. Incidentally it may be mentioned that none of the present group of cases presented indications of constitutional syphilis, though the possibility was well kept in view. At the same time I may note in passing that I have in two cases of younger persons found glycosuria and albuminuria arising as apparently direct effects of syphilis.

There may be added, as other nerve symptoms, tinnitus, vertigo, sleeplessness in an extreme degree, headache, loss of power of thought and memory, numbness in limbs, sciatica, shingles, hysterical sensations, prurigo, and marked loss of muscular energy. This last, which was noted in three cases, is here classed among the nervous manifestations, not without the recollection that it might be claimed for the muscles themselves as related with their proper glycogenic functions. In all three subjects the loss of muscular energy was accompanied by one or more of the other nervous disorders mentioned.

Angina pectoris occurred in three cases.

2. Gout existed in eight, rheumatoid arthritis (of twelve years' duration) in one. In two of these, which were frequently seen, the sugar of the urine underwent a sudden diminution on the occurrence of attacks of gouty inflammation.

In all these cases, and in others not categorically gouty, the urine frequently deposited uric acid, a point touching which I should like to make some special remarks.

3. I placed gout after nerve disorders on the ground that gout is, in my opinion, a disease to a large extent of nervous origin. And as my list is, on the whole, more illustrative of causation than of co-existence, I put the dietetic influences before albuminuria. In eight cases there was an acknowledgment of over indulgence in the pleasures of the table, and of these seven admitted marked alcoholic excess.

4. Albuminuria, in ten cases; in four associated with gout, in one with manifest contracted kidney, in the rest only during a period less than that of the glycosuria, or intermitting. In the majority of the cases but little loss of flesh occurred until the addition of conditions which would tend, irrespective of diabetes, to such a result. In fact only one patient presented marked emaciation. He when first seen was extremely wasted, and had much enlargement of the liver, with albuminuria. His illness was distinctly produced by indulgence in alcohol. Being able to forego this indulgence he presently grew much stronger and fatter, his liver subsided, and after a time both the sugar and albumen disappeared from the urine. The process of cure occupied two years, and he has now been free from all three symptoms for five years. Half the patients were well nourished, some stout and ruddy. One, a lady, was remarkably corpulent. She had, under the influence of widowhood, the climacteric, and *res angusta domi*, had free recourse to help from alcohol. When I first saw her she weighed 17 st. 10 lbs., and was passing urine in an average quantity of seventy ounces a day, of specific gravity 1038, containing much sugar, and much free uric acid, but no albumen. Under abstinence from alcohol, and from hydrates of carbon, with the free use of alkaline sulphates, her weight ran up in five weeks to 19 st. 8 oz., the quantity of the urine fell to sixty ounces a day, the specific gravity to 1021. But some sugar always remained. When I saw her a year later she had more than relapsed in her habits, and could not face the regimen previously ordered and adopted. Her weight was then 17 st. 12 lbs. 4 oz.; she was passing sixty ounces of urine daily, the specific gravity was 1034, and the sugar reaction strong.

The known duration of the cases varied from twelve years downwards. Most of them were seen by me during periods of several years, or were known to have had glycosuria for some years before or after my examination of them. The case longest under my observation is that of a solicitor in large practice, who consulted me first in 1868, being then fifty-eight years of age. He had thrown himself ardently into religious and political contests in addition to his proper work, and had used stimulants abundantly to keep himself going. He was passing then from sixty to eighty ounces of urine a day, of specific gravity about 1036, with plentiful sugar, and a trace of albumen. Mental repose, careful diet, and the use of salines followed by toxics reduced the quantity of the urine and of the sugar. He had at various times bronchitis, congestion of the apices of the lungs, great muscular weariness and sleeplessness. But maintaining rest and self-restraint he survives, being now seventy-two. When I last saw him, about a month ago, he was stronger than at our first interview. There was no known excess of urine; the specific gravity was 1013; there was a distinct sugar reaction, and some albumen. I fear that his kidneys are now contracting, but independently of the glycosuria.

Before discussing the general bearing of these observations, I should like to speak rather more fully on some of the cases.

The association of angina pectoris with glycosuria is to me a thing of novelty. And the history of the cases is most interesting.

The first which I saw was in a gentleman *æt.* 53, who consulted me in 1877 for angina pectoris. On careful examination I concluded that the angina was of gouty origin, and I ventured to remit the sentence of death which the mention of the name of that disease seemed to have passed upon him. Living a careful life he gradually lost the angina. But, when he appeared at the end of six months to report great general improvement, I found that his urine was of specific gravity 1032, and contained much sugar; the previous note having been;—specific gravity 1021, no sugar, no albumen. He has never adopted a thorough restrictive diet, and has taken more stimulant than has been ordered. Last month he appeared rosy and cheerful, having had no angina since the spring; but with urine of

specific gravity 1042, containing plenty of sugar, and in quantity about three pints in twenty-four hours.

Here it seemed as though there were some inverse relation between the glycosuria and the angina.

In the next case, a country clergyman, æt. 60, of robust build and active mind, came on account of diabetes. His urine contained sugar, but as regarded quantity passed was not above the normal. Under treatment the sugar disappeared, but shortly afterwards angina began. The angina is severe, and is associated with indications of fatty heart.

Thirdly, I have a case in which frequent paroxysms of difficulty of breathing, unconnected with lung disease, renal disease, or valvular disease of the heart, are joined with persistent but very moderate glycosuria. I see this patient seldom, and cannot get him properly watched. His attacks appear from his account of them to resemble angina, but are periodical rather than related with excitement or exertion.

The concurrence with locomotor ataxy is new to me; but on consideration has much interest in the light of the well-established affections of the pneumogastric nerve in that disease.

Among the gouty cases there are two of which I must speak more fully.

First, a gentleman, æt. 73, consulted me in January, 1875, for sleeplessness. He was a man of calm appearance, but in reality very excitable and sensitive. He presented a pallor so remarkable that I noted it as possibly related with internal flushing. He had no notable diuresis; the urine was of specific gravity 1034, and contained sugar but no albumen.

In October of that year he had gout in the little toe of the left foot. The urine was of specific gravity 1028, and gave but a feeble sugar reaction. After the attack was over the sugar returned abundantly.

A year later he had gout in the heel of the left foot, and a like reduction of the glycosuria. Later on, sciatica, with some decrease of sugar. Later on, again, shingles; urine specific gravity 1031, not much sugar, albumen. After this he began to show signs of aberrations which developed into insanity, the sugar persisting.

Second, a gentleman, æt. 62, a steady worker; a man of taste, and a collector; a *bon vivant*. At his first appearance

he told a story of gout and extensive psoriasis. The urine of specific gravity 1014, albuminous, no sugar. Eight months later, with little amendment of diet, urine increased in quantity; specific gravity 1028, much sugar, trace of albumen. The word "diabetes" frightened him for a time into care, and the sugar completely disappeared under a restricted diet. Then he relapsed regiminally. The sugar returned and the albumen increased. A sharp attack of gout followed, during which the sugar all but disappeared, to return later. This sequence recurred several times. He passed all the time much free uric acid, and several uratic concretions from the kidney. At length he had cerebral hæmorrhage and died in a few hours.

As a basis of remarks on these cases, let us very briefly consider our present knowledge of the physiological causes of glycosuria.

Glycosuria occurs always when the blood contains more than its very small normal saccharine saturation.

Excess of sugar in the blood may be due :

1. To the ingestion of more sugar than a healthy liver can transform into glycogen.

2. To failure on the part of the liver to transform moderate quantities of sugar.

In relation to this it may be stated that the liver is believed to have the power of dealing with sugar and with peptones during the process of digestion, breaking up the peptones into sugar and urea, and forming, out of the two supplies of sugar, glycogen. The glycogen formed in the liver is held by many, though not by Dr. Pavy, to be in part normally changed into sugar and to pass into the circulation for purposes of combustion, the muscles in particular decomposing sugar into lactic acid and glycerine. It is also held by many that glycogen passes unaltered into the blood to serve as an organisable material and to be combined with nitrogen to form the more complex principles of the body. There is reason to believe that glycogen varies in its readiness to undergo the saccharine change.

Excess of sugar in the blood may be due further, thus :

3. To increased changeability of glycogen.

4. To increased change of glycogen, due to altered surrounding conditions.

5. To diminished use of sugar by the system.

6. To diminished changeability of sugar.

There is every reason to believe that under heads 2 and 4 we find the most common causes of glycosuria. At all events it is certain that glycosuria is readily produced by nervous influence.

Since the remarkable discovery of Bernard that glycosuria could be produced in animals by puncture of the floor of the fourth ventricle just above the origin of the pneumogastric nerves, the links between the cause and the effect have been industriously studied by experimental physiologists. It appears that the impulse to sugar formation descends through the cervical part of the spinal cord, thence through the nerves leading to the inferior cervical ganglion of the sympathetic, thence down the gangliated cord to the splanchnic nerves and cæliac plexus. It is the most commonly received opinion that the action of the sympathetic is, under inhibition from the irritated medullary centre, to allow vasomotor relaxation, which, according to Cyon affects the hepatic artery much more than the portal vein. The hepatic part of the process therefore consists in an excess of influx of arterial blood, and a general hurrying of the circulation of the liver. Whether the ultimate cause of the glycosuria be the hurrying through of saccharine matters at a rate which gives no time for their metamorphosis (Dickinson), or an increased contact of glycogenic ferment causing more than the natural decomposition of glycogen, or whether glycogen is squeezed from the tissues into the blood, or whether there is an associated trophic influence, are questions still under discussion, but are all questions which we have to keep in mind when observing diabetes.

Independent of the irritation of the medulla, lesions of the pons Varolii and other parts adjoining the medulla have produced, in many experiments, glycosuria. And irritation of the peripheric distribution of the pneumogastric nerve will have the same effect. If that nerve be severed, glycosuria occurs when the proximal part of the nerve is stimulated, stimulation of the distal portion producing no effect. It is evident that the part of the pneumogastric is to excite the medullary centre to the exercise of its inhibitory powers over the sympathetic nerves concerned. By such channel and influence hepatic irritation may be able to produce glycosuria.

Lastly, whatever conditions in the circulation of the body at large conduce on the one hand to force arterial blood towards the liver, or, on the other, to withdraw blood from the liver, will favour or hinder, as the case may be, the formation of sugar therein.

If I say nothing of the glycogenic functions of muscles, it is because I see at present no way of measuring its participation in glycosuria.

We are now able to proceed to draw inferences from our cases as to their own nature and their relation with typical diabetes. It must be remembered that all authors have agreed in speaking of diabetes as much more fatal in the young than the old. It follows that the question may be asked, whether the diabetes of the old is of the same essential nature as the diabetes of the young? In the typical diabetes of the young, the chief clinical points are the polyuria, the glycosuria, the wasting, thirst, and other accompaniments referable to the influence of the first two. In our cases glycosuria is accompanied by slight polyuria, but also by a number of diverse symptoms not obviously referable to the urinary disorder. In fact the urinary disorder often falls, as before noted, into the second or third rank of symptoms. And it is as a symptom that it will be most usefully studied.

The symptom may be studied in relation to the several associated conditions already set forth. We have noted the abundant coexistence of nervous disease or disorder. Without going so far as to say that glycosuria is also produced through the agency of the nervous system, I think that it is safe to assume, on the basis of physiological experiment, pathology, and clinical study, that the preponderation of causation lies here. Whether the cause is to be found in disease of the nervous centres only or whether there may be any process of reflex causation is a very different matter. As regards the onset of diabetes, the frequent antecedence of great emotional disturbance of the nervous system has been recognised by general consent. Dr. Dickinson¹ has collected a large number of illustrations of this connection in his work on 'Diseases of the Kidneys.' Our cases show the existence of this in fully

¹ 'Diseases of the Kidneys and Urinary Derangements,' 1875, part i, pp. 74—77.

one third their number. But in another group we find evidences of actual organic disease of the nervous centres, *e.g.* hemiplegia and locomotor ataxy, in others insanity or hypochondriasis, and in others vertigo, sleeplessness, sciatica, zona, &c. Whether these last are to be taken as evidences of central disease or of irritation from the periphery I cannot say. In practice I should in most of such cases look to the periphery, and I am not disposed to admit that their relation with glycosuria justifies their being gathered together with it, or its being necessarily grouped with them as signs of central disease, in which "the liver is the agent, the brain the instigator."¹ My indisposition to accept the unity of diabetes is increased when I come to our second group, in which it is associated with gout. I have already quoted Dr. Lauder Brunton's expression "gouty glycosuria," and I may refer in particular to Dr. Gairdner for remarks on this subject.² In some of the cases which I have noted the glycosuria has been seen to diminish—almost to disappear—during attacks of joint inflammation. This is comparable to what occurs in diabetes during intercurrent acute inflammation. The occurrence has been commonly explained on the assumption that during febrility there is a greater combustion of sugar than at other times. In looking at the relation of gout with glycosuria I am tempted to suggest another explanation. Is the glycosuria here a phenomenon of the same kind as the gouty inflammation of joints; is it an active hyperæmia set going as part of the gouty process; set going in relation to irritation excited in the liver by dietary errors or other causes, just as joint inflammation is set up by a wrench or by over-exertion? Is it, in a word, to be taken as meaning "gout of the liver?" I do not venture to say decidedly that it is so, but in the diminished glycosuria I certainly am inclined to recognise a metastasis of the gouty process rather than a result of increased combustion.

While we are considering the gouty relationship it is fair to bear in mind the possibility of an altered chemical condition of glycogen, which may make it more ready to decompose. I have long urged that the peculiar character of the gouty inflammation of joints, particularly the indisposition to suppuration,

¹ Dickinson, *op. cit.*, p. 99.

² Gairdner, 'On Gout,' 1860, cap. vi, &c.

marks a chemical alteration of the tissues concerned, perhaps connected with urate of soda, but certainly much more subtle and comprehensive.

Thirdly, when we note the frequent association of glycosuria with errors of diet we enter on a chapter in which the influence of reflex action seems most strongly suggested. Dr. Dickinson has applied the term "hepatic glycosuria"¹ to cases of transient glycosuria without much diuresis, occurring in full-fed, gouty, and plethoric persons, whose urine is loaded with uric acid or lithates, and ceasing under purging and abstinence.

Certainly, in a case to which I have already referred, alcoholic irritation sufficient to bring about enlargement of the liver was associated with glycosuria, and as the one was removed the other disappeared. It appears to me fair to argue that as mechanical irritation of the liver by needles, &c., can bring on glycosuria independent of other nerve lesions, and almost certainly by reflex vaso-motor relaxation, so irritation set up by alcohol or by the products of a disordered gastric digestion, may set up glycosuria by the same channels.

The paper has extended to such length that I am unable to find space for full remarks on the albuminuria and the uric-acid deposits from the urine noted in conjunction with diabetes, but I may point out the greater frequency of the latter coincidence, which has been by most authors referred to the disordered action of the liver as a cause common to the two abnormalities. But it occurs in the chronic forms which we are discussing. It is little seen in typical diabetes, and to my mind it strengthens the argument for the reflex production of glycosuria through irritation of the liver.

In writing these remarks I am, however, more concerned to set forth the various associations of the glycosuria of old people than to advocate hypotheses of its modes of production. If it be considered that my contention,—that glycosuria is here to be looked at in the light of a symptom instead of as a substantive disease having other disorders or diseases incidentally associated with it,—is worthy of regard and of primary acceptance, at least in the study and treatment of the condition, I have done what I wish to do.

But I cannot end without noting the application of this ana-

¹ Op. cit., p. 99.

lytical view to the treatment of such glycosuria. In the commencement of treatment it is clearly desirable at once to rectify errors of diet, and to put the patient on a careful regimen. In fact, it is well at first to institute the dieting applicable to typical diabetes. This is a first test as to whether the glycosuria is a result of assimilative failure or of temporary irritation of the liver.

At the same time all associated symptoms and all accessible points in the history must be investigated with the view of finding out any possible cause of perverted central or peripheral nervous action. If there be evidences of mischief or eminent disorder of the cerebral nervous system, such remedies as the iodide and bromide of potassium, arsenic, opium, or codeia may be used, or the various nerve-tonics, iron, quinine, &c., may be given where there is evidence of much want of tone in the vessels.

In the gouty and dyspeptic cases, where the patient is more or less plethoric, or at least robust, the steady use of saline aperients in addition to careful dietary is generally recognised as necessary. These people are the diabetics who get well at Carlsbad and Vichy. They may be very well treated at home if they will submit to the irksome dietary restraints. I usually prescribe for them a mixture of carbonate and sulphate of soda in hot water taken early in the morning; in fact, a rough but very effective imitation of Carlsbad water.

After a time they may with advantage use the mineral acids, particularly the nitrohydrochloric acid. The patients in whom the gouty condition survives the remedy of digestive disorder will of course require special treatment. Here alkalies, iodide of potassium, and often the stronger tonics will be of service. The neurotic character of gout will also frequently call for the use at times, or over lengthy periods, of narcotics such as opium, or sedatives such as belladonna or the bromides. Lastly, I am reminded by a friendly critic of a point which I had intended to note, the value of regular muscular exercise. It is precisely in the class of cases here discussed that the benefit of such exercise, as recommended by Dr. W. Richardson and illustrated by his personal experience, is most plainly evident.

SOME RECORDS OF SURGICAL EXPERIENCE,

BEING A CONTRIBUTION TO THE

COLLECTIVE INVESTIGATION OF DISEASE.

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Lithotomy.—Hernia.—Caries.—Plastic surgery.—Of saving or sacrificing an injured limb.—Fissure of anus.—Ligature of arteries.—Ruptured bladder.—Primary and secondary amputation.—Nature of flap in amputation.—Trephining.—Fracture of base of skull.—Operations in general.—Exploratory operations.—Imperforate and artificial anus.—Exploration of rectum.—Excision of joints.—Dissecting wounds.

IN offering the following brief miscellaneous records for insertion in the 'Hospital Reports,' I wish it to be distinctly understood that I claim neither originality nor novelty for what I have written. I have narrated, I hope simply and intelligibly, what I have myself observed and done, and learned to trust and mistrust. In truth, I think it well that a hospital surgeon, at the close of his career, should contribute something towards the collective investigation and treatment of disease. Probably in some other instances, as in my own, the grains of wheat worth preserving may be but few; yet, in the aggregate, if all contributed, a valuable record of personal experience might be compiled, which would be not only of practical utility but valuable also for statistical purposes.

I am aware it may be urged that antiseptic surgery has, in many respects, recast or placed on a different footing the results of previous experience. It may be so; I cannot gain-

say what the present generation of surgeons holds as indisputable, whatever may be the verdict of the generation to come. But, long before this modern treatment of wounds was introduced, I had learned that the success of operations depends very much on the most scrupulous cleanliness and assiduous attention to what are too often regarded as minor details ; and I am free to confess that I attribute much of the success of the antiseptic method of treatment to the unremitting care exercised in these respects.

I may further acknowledge that a sense of obligation to my Alma Mater, where I was a learner for nearly half a century, would scarcely have outweighed my reluctance to undertake this task, were it not that I know my jottings will be read chiefly by my old pupils, among whom I reckon so many valued friends ; and I hope they may be thereby reminded of the many pleasant hours—I trust such to them as well as to myself—that we spent together in the wards and lecture-room of our old hospital.

Lithotomy.—My experience in lithotomy is limited in comparison with that of my immediate predecessors. Cases of stone were no longer sent up to London for operation as previously, but found their way to county hospitals, or were treated by competent provincial surgeons.

I have operated on about forty cases, with the loss of two patients ; and, singular to say, these were both children. One, a boy of three or four years old, never rallied from the effects of the chloroform which he inhaled, but died on the morning after the operation, having remained in a semi-comatose state in the interval. A post-mortem examination revealed no explanation of the cause of death, either from disease or the operation. The case was extremely simple and the stone small. This occurred soon after the introduction of chloroform. The other fatal case was of a boy, about ten years old. The existence of stone had been long known, but the operation was refused until the condition of the patient had reduced the chances of success almost to a minimum.

The oldest patient on whom I operated was aged seventy-four, the youngest twenty-two months old. The instruments I have used are a staff with a moderate curve of about three inches, and a rather broad scalpel, with a button point

which moved freely in the groove. I dare say the long curved staff has its advantages, especially in leaving the left hand at liberty to guide the knife. But, from habit, I prefer taking the staff into my own hand; the harmonious action of the two hands in the incision of the prostate, when acquired, seems to me to leave nothing to be desired. I was satisfied with the incision my scalpel made, and did not incise the prostate further. But one precaution I always took, which was to withdraw the knife slowly, with its edge pressed gently against the lower part of the wound, so as to secure entire division in this direction of every intervening filament of tissue which might interfere with free drainage, probably one of the most important precautions in the operation. I did not introduce a drainage tube, but allowed the urine to pass by the wound. A tube is required where it is necessary to plug the wound to arrest bleeding; but, except in this case, I regard it, as I do all foreign bodies in a wound, as prejudicial. The passage of the water over the incised surface helps to seal the open mouths of the vessels, and the healing process goes on without disturbance.

I may here remark, incidentally, that my practice in cases of extravasation of urine has been guided by the same principle, that of allowing drainage by the wound. A catheter may be useful in some exceptional instances; but until the healing process is considerably advanced I am satisfied the presence of a catheter is not only useless but positively injurious.

The stones I have removed by incision varied from five grains to a quarter of a pound.

In one instance only has the disease recurred, so far as I know, and this was in a patient who had previously been under my care for fractured pelvis with ruptured urethra. A year or two after his recovery—he was a railway guard—he presented himself with symptoms of stone. I cut him, and the stone—phosphatic—crumbled under the pressure of the forceps, like a mass of pure lime. Much care was taken by repeated washing of the bladder to remove every particle of the fragments, and he made a good recovery. But he again presented himself, and was again cut, a phosphatic stone, similar to the former, being removed with success.

The largest mulberry calculus I removed was from a young

man who had carried it as long as he could remember ; to suffer in his bladder seemed to him a normal condition of existence. He made a satisfactory recovery, and life became a new experience to him.

As regards the degree of suffering caused by different stones, I think more depends upon the condition of the bladder and its sensitiveness than upon the nature of the calculus. Certainly I have seen as much or more pain caused by a smooth than by a rough stone. Probably the sensitiveness of the mucous membrane is determined by the quantity and tenacity of the secretion poured out on its surface.

I have had some mishaps as, I presume, has happened to most operators. In one case only had I any alarming hæmorrhage, and this required continuous pressure on the pudic artery for some hours before it ceased. Troublesome venous bleeding in old men is not infrequent, but it has never caused me alarm.

In three of my cases a communication was established between the wound and the rectum. In one a large and hard lithic acid stone broke in the wound into two fragments, and the bowel was lacerated near to the anus. In the second case I was induced, by an ardent admirer of the long curved staff, to try this instrument which he held. I was foolish in forsaking the instrument I had so often proved, and I suspect I must have wounded the bowel with my knife in adopting this, to me, novel and tedious method of cutting into the bladder. Both these patients recovered without interference or subsequent inconvenience. In the third case I had to remove a stone, weighing three ounces, from a young man with a deformed pelvis, in whom the tuberosities of the ischia were very near together. The extraction of the stone took me longer than any that I have removed, for I never hasten this stage of the operation. This patient went on well until after the lapse of three or four days ; the water ceased to pass by the wound and he had a sharp rigor, followed by the bursting of a prostatic abscess. Shortly afterwards it was evident that there was a communication established between the wound and rectum, and this never closed. It was high up, as far as the finger could reach, and I have no doubt between the prostatic portion of the urethra and bowel. I

saw this patient frequently afterwards, and he made light of his trouble, speaking of it as only an inconvenience of little importance, I therefore did not attempt anything for his relief: the cautery was, indeed, the only remedy, and this it would have been almost impracticable to apply; moreover I did not know whether the communication was direct or tortuous, though I remember my impression was that it was indirect, and that I might do harm rather than good by interference.

I can recall but one instance in which I was unable to reach the bladder with my finger. It was in an elderly gentleman of tall stature, and with a very deep perineum. This is the only case in which I used the blunt gorget to direct my forceps into the bladder. The prostate was large and there were several small stones. Unfortunately I failed to remove all, for they had got into a sacculated portion of the bladder behind the prostate, and a portion of the gland came away in the blades of the forceps. After the lapse of a few days the patient's continued suffering induced me to suspect the truth; which I verified by a short sound passed into the bladder through the wound. Though a week had elapsed I found no difficulty in breaking down some deep adhesions in the wound by simply introducing my finger, and I thus removed two more calculi with a pair of small forceps. From this time he recovered without any further drawback, and suffered no inconvenience from the loss of a part of the prostate. The blunt gorget is a valuable instrument in lithotomy with a deep perineum; indeed, I think I should have used it more generally, if I had learnt earlier in life to appreciate its utility in directing the forceps and expanding the opening in the prostate.

I am not aware of any others mishaps to record, and I will finish what I have to say on this subject by a few general remarks. It does not appear to me that there is any essential improvement in lithotomy since Cheselden's time. I have never performed any but the lateral operation, and I have never had occasion to divide both lobes of the prostate, though I extended my incision, with a straight button-pointed bistoury, on two or three occasions during the extraction of the stone. I believe that success in the removal of a large stone

very much depends on the patience of the operator; irremediable mischief is occasioned by force, and there is even less excuse for haste now anæsthetics are used than in the earlier period of my practice. The yielding property of the prostate is well known, but its violent laceration may be fatal. I remember a conversation I had with Mr. Bransby Cooper before my first operation illustrative of this point. I was anxiously asking some questions relative to the operation, which he answered in his usual good-natured way, and his concluding words were these: "The incision your knife makes in entering the bladder will admit your finger, wherever your finger will pass your forceps will follow, and by the opening they make you can extract almost any stone." And I found these axioms practically correct, with rare exceptions, but then it was necessary to be patient where the stone exceeded a moderate size. In lithotomy, as in all operations consisting of several and independent steps, it is important to keep the mind fixed on each stage of the operation, without allowing it to be distracted by that which is to succeed. This may seem a very trite saying, yet I think it is not always attended to: cautious and deliberate action is far safer, though more time may be required; and this remark is applicable to the earlier steps of lithotomy as much as to the final one of withdrawing the stone. I adopted the use of a button-pointed scalpel, because I had known of more than one instance in which the bladder had been wounded by a sharp-pointed knife: the exchange of knives necessarily protracted the operation, but I gained in security. When I first operated I used the same scalpel throughout.

I have never had occasion to divide the sphincter ani for inflammatory mischief and burrowing of pus in the wound; but I have no doubt about the desirability of laying the wound open into the bowel where this condition exists. In the after-treatment the position of the patient is important. The legs should be raised and separated, and the body so placed as to allow of ready drainage of the urine. A very early return of the water to its natural channel generally caused me uneasiness, yet this is often only a temporary condition.

Of lithotrity I have nothing to say worth recording. I have had but few cases, and in two instances have removed

larger stones than I ought to have attempted to extract by this method. I had miscalculated their size.

Lithotomy in the female.—I have never operated by cutting in the female but on one occasion, and that was in a child, about eight years old, the stone being as large as a walnut. This was many years since, when lithotripsy was but little employed. I passed a straight narrow bistoury along a director into the bladder, and cut downwards and outwards as I withdrew the knife; in fact, in the same direction as in lithotomy in the male. I had no difficulty in extracting the stone, and no untoward symptom followed except that a considerable time elapsed before the child recovered entirely the power of retaining her water. I should now prefer crushing such a stone. I think rapid is preferable to slow dilatation, as there is less risk of incontinence from the former, so far as I have been able to judge.

Hernia.—I have often regretted that I did not keep an accurate record of all the cases of hernia in which I have operated: but in ordinary hospital practice they are of so frequent occurrence that they do not, at the time, seem to possess the interest or importance of rarer cases. Yet the recurrence of precisely similar conditions in consecutive operations is quite exceptional; indeed, I know of few instances in which an operation affords so much variety in its details, and therefore materials by which even the practised operator may extend his stock of experience. Given the material condition of early interference, I regard the operation for strangulated hernia as one which may be ranked amongst the most successful in surgery. I believe I have seen nearly every variety of strangulated hernial protrusion. The most dangerous are those of sudden descent resulting from violence; early operation can alone save them. Operations for umbilical rupture, especially if large, are attended with more risk than for the inguinal or femoral form.

The employment of the taxis requires tact and delicacy; the former can be acquired only by experience; without the latter infinitely more harm than good may be done. Rough manipulation, purgatives, and temporising delay account for a large percentage of the fatal cases of herniotomy. I attach very little value to any of the adjuncts to the taxis, which

involve delay. I have tried the warm bath, the local application of heat and cold, the administration of opium, but without much encouragement, and with the certainty that precious time is lost thereby. I have succeeded occasionally in reducing a hernia by raising a patient so as to place the pelvis considerably above the level of the shoulders. The principle is sound, being the substitution of traction by the weight of the viscera, for pressure on the limited surface of the rupture. But I believe the golden rule should be, to give a fair trial to the taxis, and if you fail, then to operate.

I generally have dissuaded my patients from taking chloroform, as the complication of after-sickness is serious. A simple straight incision over the neck of the tumour generally suffices; formerly it was the practice to divide the skin by a T-shaped incision, or by two incisions meeting at an angle.

Not infrequently some nodules of fat, external to the sac, so closely resemble omentum that they are likely to deceive the young operator. Intestine may generally be readily distinguished by the arborescent distribution of its vessels. For the division of the stricture I have employed a guarded knife, which likewise acts as a director.



I have operated subcutaneously, and also without opening the sac, in several instances. The former operation may be available in a few cases of very recent strangulation without urgent symptoms. The latter, except in such instances as those just referred to, I entirely discarded. I think the advantage supposed to pertain to this particular form of operation is imaginary; the fallacy consists in assuming that the condition of an inflamed hernial sac and of healthy peritoneum are identical. The fact is that though a healthy serous or synovial membrane is very susceptible under the influence of exposure to the air, they cease to be so when already in an inflamed or otherwise morbid state. So far as I can judge from my personal experience, opening the peritoneum forming

the sac of a strangulated rupture adds nothing to the risk of the operation, whereas there may be great peril in returning its contents without inspection: and surely the inflammatory product within the sac must be more prejudicial by contaminating the peritoneum than simple exposure of its interior, to say nothing of the after-drainage. It is very important, where the condition of the parts renders it probable that there will be a free discharge, to arrange that it shall not be retained or forced back into the abdominal cavity; as a choice of evils I would rather leave the wound unprotected save by a light poultice or water dressing than entirely block the opening.

The most careful search should be made in obscure cases: an old and adherent omental hernia may apparently fill the sac, without any unhealthy appearance to account for the urgency of the symptoms. But behind and hidden by it may be a very small knuckle of intestine, which is the seat of all the suffering. On more than one occasion I have operated and found nothing but healthy omentum in the sac, though the evidence of acute strangulation was present. I believe that in these cases a small knuckle of intestine had been strangulated, and returned possibly during the operation, as the neck of the sac by no means tightly grasped the omentum within it.

I think it is a safe axiom to act upon, that when in doubt it is right to operate. There is but small risk in operating unnecessarily, whereas your patient's life may be jeopardised by abstinence from interference.

I remember, during my apprenticeship at the hospital, it was the practice to give calomel and opium two or three times daily, commencing immediately after the operation; purgatives also were not infrequently administered far too soon. The dread of peritonitis prompted the calomel treatment; but I think that, of peritonitis pure and simple, patients rarely die: they sink from shock and protracted suffering, with vomiting and inanition;—no doubt associated with some peritonitis, but chiefly due to long strangulation, with the superadded misfortune of having been repeatedly and perhaps roughly handled and dosed with aperients.

The after-treatment should be of the simplest kind. Perfect rest, light dressing, free drainage where needed, only

such food as the stomach can take and digest comfortably, opium at intervals to keep the bowels perfectly quiet until the injured intestine has had time to recover; then, say after the lapse of at least four or five days, an enema may be administered of some simple kind to stimulate the lower bowel to act.

During treatment I have found that a sand-bag, which may be graduated at pleasure, forms the best support and protection against the re-descent of the hernia.

As regards age, the youngest patient on whom I have operated was an infant of eleven months, who had an acutely strangulated inguinal hernia, of course the congenital form. He made a quick recovery. I operated successfully on an old lady of eighty-four. But in another of ninety-one the operation had been delayed too long, the gut being gangrenous. She survived the operation eighteen days. The strangulation of congenital rupture is usually very acute.

Caries.—This condition in bones, which holds the same relation to necrosis as ulceration in soft parts does to gangrene, should be studied in this light with a view to its surgical management. The process of destruction is essentially the same as in ulceration of soft tissues, and that of repair differs only in the nature of the texture reproduced. These remarks are trite enough, but their application is in the inquiry whether the treatment ought not to be consistent with this parallel? I think it should in every respect, both general and local. Where practicable, free vent should be given to the discharge, whether during the destructive or reparative stage; and the living tissue should be stimulated to activity in throwing off the dead, and in accomplishing repair. In some cases, where large joints are attacked, this treatment cannot always be applied; but I think that in many instances free incision into even important joints may be practised with much advantage and without risk: for a diseased synovial membrane may be placed in the same category of insusceptibility as a diseased serous membrane. There is one form of treatment of carious bone which is generally advocated, but which I have rarely employed, because it is at variance with the principles I have referred to, and also, in my experience, is not productive of the good results ascribed

to it; I mean gouging. It seems to me as rational to expect a healthy surface to succeed a similar proceeding in an indolent or spreading ulcer. Surely, wherever the gouge is applied healthy cancellous tissue must be bruised and killed, and then an extension of the mischief must follow. It is in the tarsus that this rough handling most generally finds favour. I prefer a free external incision and dilatation of the bony sinus, removal of any dead fragments that may present themselves or may be loose in the cavity, and then the injection or constant application on lint of a solution which acts both as a stimulant and bone solvent.

It is a familiar fact that bone elements are found, in more or less abundance, in the discharge from a carious cavity. I assumed that phosphoric acid would be the best solvent of the inorganic constituents, but Dr. Bernays informed me that acetic acid is preferable. After some experiments I decided on using this, in the proportion of one part of the acid, known as Beaufoy's No. 11, to five of water. This I injected daily into the carious cavity, and applied also by introducing lint dipped in the solution, being careful, however, not to plug the opening. I venture to commend this practice to others. Gouging may appear to hasten these cases, but for the reasons I have assigned I do not believe such is really the case.

Whilst on this subject I may refer to a condition of cancellous texture, apparently the precursor of caries and abscess, where an opening into the bone affords immediate relief. When, for instance, the symptoms and sufferings of a patient may induce the surgeon to trephine the head of the tibia, in expectation of opening an abscess, he may find no pus: yet he need not regret his operation, for the suffering will probably be relieved, and the diseased action be cut short by the discharge accompanying the healing.

Plastic surgery.—The operations included under this head were comparatively few and rare when I was young. Stromeyer and Dieffenbach were the chief authorities on this subject at that time, and I have witnessed the clever operations of the latter when I was studying in Berlin. He was fond of Englishmen, and I accompanied him several times in his private practice as well as in his hospital. The conser-

vative character of plastic surgery makes it attractive, and I have naturally had my share of it since the time of which I speak. Of special operations I have not much to say, but I would make one or two remarks on the subject generally which experience has taught me, albeit they may be of little value. I think there is not infrequently a disposition to do too much at once, and failure is the consequence. Of course the chief point demanding attention is to secure the vitality of the skin which is removed from one part to another; and this is accomplished best by leaving a broad attachment to the surrounding texture until the new relations are in a satisfactory condition. Twisting a peduncle often interferes fatally with the circulation in the flap. The bond of new adhesion should be as broad as possible, and the sliding of a flap to its new position is the best mode of filling a gap where it is practicable. Edge-to-edge union often fails. I think fine needles produce less irritation than sutures, where they can be used, and tension should be obviated by every available means.

The operation for ruptured perineum illustrates these principles; the sutures must be deep and the surface of adhesion broad for success to be obtained: and I was guided by failure from previous neglect of this desideratum, in planning a successful attempt to close a large urethral fistula in front of the scrotum, by raising a flap from either side of the penis and uniting their *surfaces* over the gap, which was nearly an inch long. This case is recorded in the twenty-eighth volume of the 'Medico-Chirurgical Transactions.'

I may here notice an operation for enlarging the oral aperture—it could not be called a mouth—which was contracted by the healing of a burn. I used a fine pair of scissors to divide horizontally the skin and subjacent textures on either side, to the exclusion of the mucous membrane. A slip of the divided textures being dissected out, the mucous membrane was also cut parallel to the first incision, and the margin was fixed to the skin above and below. Regarding this, and indeed all plastic operations, I would remark that much margin must be allowed for subsequent contraction. I cannot say that in healing this operation behaved so well as I had anticipated. Less was obtained by this eversion and

fixing of the mucous membranes than, theoretically, I expected ; and I may say the same in saving and everting the mucous membrane of the urethra after amputation of the penis. Contraction will take place, for the mucous membrane will not remain just where it is wanted, and, moreover, soon loses its characteristic texture.

Of saving or sacrificing an injured limb.—There are few opportunities in surgical practice where the exercise of judgment, discretion and prompt decision are more required than in determining the question whether a recently injured limb should be saved or sacrificed. The responsibility of the verdict is an anxious one, yet hesitation may be fatal. In some instances the refusal of the patient to submit to mutilation settles the question, but generally it is a responsibility which rests, as it ought, solely with the surgeon. Of course, I speak of those cases only which, from the nature and extent of the injury, admit of doubt ; and in these surgeons do not always agree. The first consideration is to save life, *i.e.* not to risk it unduly to save a limb. Associated with this consideration is the supplemental one of how far the limb, if preserved, may prove useful or be a simple encumbrance to its owner. Precedents are valuable under these circumstances, but they may be misleading ; for the local condition is not always the most important consideration, nay, in many it is quite secondary ; and herein is the special opportunity for the surgeon to exercise his judgment. The general conditions alluded to may be classed under two heads, *viz.* that which exists as the immediate consequence of the injury, and that which has reference to the age, general health, antecedents, and temperament of the patient : upon the latter category only do I wish to make one or two remarks ; and these observations are not less applicable to country than to town practice ; though it is well known that in the pure air and healthier habits of agricultural districts the surgeon has valuable adjuncts in the treatment of his cases. Many old men retain their recuperative power, and young men are prematurely old, by reason of inherited tendencies or their habits. I should not, therefore, be very much swayed by age alone. But general health and susceptibilities demand consideration, as assisting in determining the question of which I

am speaking. A careful inquiry, therefore, regarding a patient's antecedents in these respects is essential, especially in reference to his habits. The abstemious man, of previous good health, would have a fair chance of recovery from an injury which would be fatal to a *bon vivant* or habitual toper, for whom amputation would offer a better prospect than the tedious healing of a complicated injury. There is one other element to which I have learned to attach considerable value, sufficient, indeed, in not a few instances, to weigh down the otherwise evenly balanced scale; I mean the moral and physical temperament of the patient. I speak now especially in reference to temper and disposition. This information can be obtained satisfactorily only from relations or friends, yet the watchful surgeon may learn much from his own observation. A placid, docile and patient disposition is as much in favour of a sufferer, as an irritable, nervous and impatient temper is adverse to his recovery; especially where long confinement and protracted and absolute repose are necessary conditions in the treatment. Other things being equal the placid man will recover where the irritable man will succumb.

As regards local conditions bearing upon this question, I would remark that very complicated injuries about the ankle-joint generally do well; whereas, apparently less serious injury to the knee-joint is relatively often fatal, if the limb be saved. Extensive laceration with loss of texture of the skin is a very serious injury, even though deeper textures be not involved: indeed, much laceration, without loss of texture, is often attended by severe constitutional disturbance, and therefore should not be regarded lightly. The risk of partial loss of vitality, dependent on the contused nature of a wound, requires consideration; and, of course, the quantity of blood lost and the risk of recurring hæmorrhage. But in truth every case must be separately studied. General principles based on experience and thoughtful reflection are necessary; but the surgeon who trusts to precedents alone to guide him in his practice will be constantly at a loss, not only in an emergency such as I have been considering, but in his every-day duties, which demand all the resources of a ready and cultivated intelligence.

Fissure of anus.—I remember the mother of a large family, who was suffering from fissure, once saying to me that she would rather bear the pain of giving birth to a child than that incurred by the act of defecation when the bowels were confined. There is no doubt the suffering is great; and it is aggravated under distension by the rigid contraction of the sphincter consequent on its morbidly excited reflex action. Happily the remedy is simple and sure. It is a singular circumstance that the fissure is so usually in the coccygeal border of the outlet. Why this is so I do not know, except it be that there is less redundance of cutaneous texture here; certainly its presence at any other part is quite exceptional. In operating it is not necessary to cut into the fissure, though it is desirable to cut near it. I have never forcibly dilated the sphincter so as to split the fissure, for I do not recognise any advantage in this coarse mode of operating. The forefinger of the left hand having been first introduced into the bowel, a straight and very narrow bistoury with a button-point is introduced along the palmar surface of the finger; its edge being then turned towards the bowel, the cutting is done in withdrawing it. The incision need not be very deep, but should be carried with tolerable freedom outwards, so as to divide the skin of the verge and the inner fibres of the cutaneous sphincter. A shred of lint may be laid in the wound for twenty-four hours, but it is scarcely necessary. These fissures are often quite out of sight, but can generally be felt; the contraction of the sphincter hides them. It is foolish to temporise with this condition; caustics torture without curing. I have known suffering like that caused by fissure as the consequence of a thread-like band crossing the back edge of the anus, but this would be readily detected if it existed. I have never had to operate a second time.

Ligature of arteries.—I have very little to say on this subject, although I have tied repeatedly almost every artery in the body except the iliac. This exception is remarkable, as I had a full share of operations during nearly the whole of the thirty years that I was actively engaged at the hospital; yet it is not more so than a similar circumstance noticed in my remarks on injuries of the head. I have twice tied the common carotid for penetrating wounds of the neck, when the

source of hæmorrhage could not be identified, and there was no time to be lost. Both cases recovered without any cerebral symptoms whatever. In similar circumstances I should be induced to adopt the same operation: to search for a wounded vessel, in either of these cases, would probably have been futile and almost certainly fatal.

I once tied the facial as it passes over the ramus of the jaw for a small aneurism of this artery higher up, which was thus cured. The first time I tied the subclavian artery for axillary aneurism the patient made a satisfactory recovery. But my second case was unfortunate; for at the end of a fortnight, when the wound was very nearly healed, and I expected that the ligature was about to separate, the patient, who was a man of passionate temper, raised his arm in a threatening attitude to strike another patient in the ward, and forcibly tore away the ligature. A few drops of arterial blood followed, but this gradually increased in quantity, and he sank exhausted. If an animal ligature had been used, and cut off close, in all probability this man's life would have been saved.

To the dissector nothing seems easier than to tie the brachial artery, but the actual operation is by no means so simple, on account of the surroundings of the vessel. In bleeding palmar arteries, where a compress does not command the hæmorrhage, it is usually preferable to tie the brachial at once: ligature of both radial and ulnar vessels is inefficient where the hæmorrhage is persistent, for the interosseal supplies blood in their stead.

In ligature of the femoral artery I prefer cutting over the sartorius rather than on its inner side; there is thus less risk of injuring the saphena vein, and the artery is more directly under the incision when the muscle is drawn aside. Moreover, by cutting too much to the inner side the edge of the sartorius might be missed, and the adductor longus be mistaken for it: but this could not happen to a competent anatomist, though I have repeatedly seen it happen, in the dead body, to those who ought to know better.

Ligature of the posterior tibial artery is not so difficult an operation as is often represented; it is only rendered so by ignorance of the relative anatomy of the parts concerned. The same may be said, in a minor degree, of the anterior

tibial high up: the adhesion of the muscles to the fascia is apt to confuse their relation to each other in the operation, and may thus mislead the surgeon.

I was present when Mr. South ligatured the aorta, assisting him throughout the operation. I did not approve of the main trunk being tied, because I felt that the common iliac was healthy enough to carry a ligature; but my opinion was overruled by my seniors. I remember dissecting a subject with complete obliteration of the thoracic aorta high up: but this process had been the work of time, and dilatation of the anastomosing vessels had kept pace with the diminishing calibre of the trunk. Can the sudden obliteration of the aorta in any part of its course be long survived? It is straining nature's resources too far.

My experience of secondary hæmorrhage after ligature of an artery in its continuity is that it occurs rarely in a healthy vessel, but is much to be dreaded in one of degenerate tissue. I cannot recall a single instance in which I have had occasion to tie a vessel of any size a second time from this cause; the subclavian case to which I have referred was exceptional, and did not admit of a second operation.

Ruptured bladder.—Ruptured bladder is generally regarded as a fatal injury; and so, indeed, I believe it is, with rare exceptions. Yet the judicious boldness which has, of late years, had one of its manifestations in more free exploration of the abdomen, seems to offer a possible, if not a probable, remedy for a condition which admits of no other satisfactory treatment. I say that there are rare exceptions to the fatality of these injuries; for I believe that if the rupture be in a favorable position for continuous drainage, with a long tube attached to an elastic catheter, a rent may be spontaneously closed: and I relate the history of one such case in my published lectures delivered before the Royal College of Surgeons (p. 333). But, unfortunately, we have no means of judging of the position and extent of the rent, though the symptoms and signs are generally of a nature that leaves no doubt as to the character of the lesion. I have remarked, however, that which, *à priori*, would probably not be expected, that the presence of urine in the peritoneum is not resented so actively as that of intestinal contents when extravasated

from ruptured bowel. The shock consequent on rupture of the bladder is, no doubt, considerable ; but so far as the immediately consequent peritonitis is concerned, I should not expect death to result from this cause, if the mischief could be arrested by surgical interference. This has surprised me, as the presence of urine in areolar tissue is so certainly and speedily destructive wherever it spreads : but possibly the peritoneal secretion may vary more than we are aware of in the constituents it holds in solution ; and thus the urine, especially when freely diluted, may not be so entirely foreign when present in the serous cavity as it is when diffused in cellular tissue. I should not hesitate, with my present opinion on the subject, to open the abdomen to search for the rent, and to close it if possible—and it generally is practicable—and subsequently to secure efficient drainage in the way I have noticed. In performing such an operation I should be careful to sponge out the pelvic cavity, and I would close the wound in the bladder with animal sutures cut off close. I cannot support this opinion by any personal experience of its result ; I can only recommend it as justifiable from my knowledge of the usual fatality of these cases, and from belief that this fatality is due to the perpetuation of the mischief rather than to the immediate effect of the lesion. But I will not pursue this subject further, as I have discussed it more fully in my college lectures.

Primary and secondary amputation.—I will make but one or two remarks on this important subject, which has justly received so much attention from many able commentators. Where amputation is imperatively demanded, *i.e.* where there is no question of saving a limb, it is only profound collapse that would induce me to delay an operation. I say profound collapse, because shock, more or less severe, is a necessary consequence of these injuries ; and their complicated nature, moreover, generally involves the risk of recurrent hæmorrhage when reaction comes on. There are no circumstances under which I dread to encounter nature—if I may so express myself—so much as in striking a blow when she is making an effort to rally after a shock ; for when she feels it she is apt to surrender in despair. It is more judicious to strike again before there has been time to rally ; for it is remarkable

how little the second shock is felt at this time ; and, if hæmorrhage can be controlled, it adds little to the peril of the patient's condition. But these remarks do not touch the question of primary or secondary amputation, in their strict meaning ; for the definition of the latter, as regards time, should be limited to that condition which supervenes after some effort at repair has been made ; when, from whatever cause, it appears that the effort is failing, and that the life of the patient will probably be the penalty. Where amputation, sooner or later, is evidently the only remedy, I have no hesitation in preferring an early operation, and especially for the reasons I have just assigned in speaking of immediate amputation. But when the nature and extent of the injury, and the general condition and antecedents of the subject of it are such as to leave on my mind a reasonable doubt of the incurability of the lesion, I should be disposed to give the patient the benefit of that doubt : and this for the following reasons. The circumstances of the case would probably admit of the reparative power of the patient being tested until a sufficiently advanced stage of the case had arrived for the infliction of a second shock to be borne with comparative impunity ; and the surgeon may then interpose beneficially, by relieving what I may term an avowedly fruitless effort : and I may observe that this is a condition in which Nature—to continue this figurative mode of expression—welcomes such interposition, and thankfully transfers her previously futile agency to the kindly healing of the fresh wound. Moreover, it is to be borne in mind that, with this prospect in view, we give the patient a twofold chance ; that of saving both life and limb ; and, at worst, a reasonable hope of saving his life, by the sacrifice of his limb if that should become necessary. And it must be familiar to all surgeons that, in amputation under the circumstances referred to, the expectation of recovery is much better than in primary amputation ; for I should place such cases as I am considering, in the same category with similar operations necessitated by wearing disease ; which are, in the absence of organic or other impending mischief, far more successful than primary operations of importance needed for injury. Amputation of the thigh, for instance, undertaken for hopeless disease of the knee, generally succeeds, and recovery is often

rapid : whereas the same operation for a crushed joint is too often fatal : such, as least, is my experience. And I am disposed to view many other operations in the same light. I have observed that where patients have suffered severely from stone in the bladder, provided that suffering is not due to organic mischief, they recover more satisfactorily after lithotomy than those who have suffered little, because the relief experienced is greater : and so with other operations. Indeed, each year's experience has added to my confidence in Nature's resources and my vigilant observation of her indications : and this, after all, constitutes, in my humble opinion, the great lesson of a long life spent in the observation of disease ; and it should find its practical application in a watchful respect for all she is willing to disclose, and a compliant—I do not say servile—submission to her guidance. But this study must carry with it a capacity for the just interpretation of what we witness ; which, also, experience alone can impart.

Amputation at the shoulder-joint is rarely demanded for injury : if only the tubercles and their attached muscles be left, it is wonderful how useful even this short but mobile stump becomes. I have only twice amputated at the hip-joint for disease, and both patients recovered from the operation.

Of the nature of the flap in amputations.—Most surgeons have their special opinions on this subject, some preferring much and others but little or no muscle in the flaps of their amputations. After testing various methods I have, for a long time past, arrived at the conclusion that the skin-flap, in most cases, makes the more satisfactory stump, when fully healed. The only exceptions to this rule are those in which the entire limb is removed at the shoulder or hip-joints. In primary amputations for injury we must of course be guided by circumstances : yet these are rarely such as to necessitate a deviation from the rule. It is true that flaps, with plenty of muscle and nicely adjusted, make a far more sightly stump at first : but it is rather of the stump healed than of the stump after its first dressing that we ought to think ; and, as I have said, I have found the exclusion of muscle more generally successful in this respect. Reactionary hæmorrhage is less likely

to occur when the muscular arteries are cut through transversely than obliquely. The tension of the adjusted flaps is less where skin, of which there should be an ample sufficiency, is alone employed: and I think the risk of much suppuration is thereby limited. Moreover, it is somewhat difficult to forecast how the muscles, if composing part of the flap, will behave, as regards retraction. Certainly, in immediate operations for injury, if muscle be retained it must be cut shorter than where the operation is for the removal of disease. This seems paradoxical, but the explanation is simple. When touched by the knife the healthy muscle contracts vigorously; and if divided in this contracted state, its subsequently relaxed condition will manifest the correctness of the remark, by the inconvenient redundance of the flesh protuding even beyond the skin, especially in such long unattached muscles as the ham-string. Such is not the case in the attenuated muscles of a diseased limb, in which the retractile property of the skin is relatively less interfered with. Insufficient skin, in either form of operation, is a serious defect; but even a superfluity is no great fault, though certainly undesirable. I prefer two semilunar flaps (except in the upper arm) to the circular incision which was almost universally employed when I first entered the profession. The former method admits of more easy adjustment; and if there be suppuration the drainage is better. The most accurate adaptation should be secured with plenty of sutures; but not until sanguineous oozing has ceased. All fibrous structures, such as tendons and fascia, should be removed as far as can be from the flaps.

One word respecting Pirogoff's amputation. My experience of it is not encouraging: it is too uncertain to trust. When successful in the union between the opposed surfaces of the tibia and os calcis there is nothing to be said against it: but I would rather trust to Syme's amputation of the foot which rarely fails of being a complete success.

Fractures of the skull.—I have treated of this subject in my College Lectures, especially in the relation of fractures to lesion of the great nerve centre, and have also made some remarks on the mechanical causes of fracture of the base of the skull, which I do not wish to repeat here. It seems to me that the operation of trephining is of more frequent occurrence,

—finds more favour now than formerly. Whether this be so or not, it is a singular circumstance that I have never had occasion to perform this operation, pure and simple, in the whole course of my practice; and I have never had occasion to regret that I abstained from so doing. Of the value—I may say the inevitable necessity—of trephining in some cases I have no doubt: but it so happens that no such necessity has been laid upon me, though the operation was, in one case under my care, performed with somewhat needless haste, before I could reach the hospital; the condition being that of pressure from the presence of pus beneath necrosed bone, where no doubt the interference was appropriate. The fatality of the operation, *per se*, in the many cases I have witnessed has strongly impressed me with its serious nature; this fatality arising from sloughing of the dura mater and consequent extrusion of brain. The use of the trephine, but more commonly of Hey's saw, in removing depressed fragments of bone is of course familiar to me. In well-marked cases of suppuration consequent on fracture without depression, the application of the trephine is indicated; indeed it is essential: yet the result, so far as I have observed, is scarcely commensurate with the anticipation. In comminuted fracture there should be a careful search for fragments driven into the brain: overlooking any such fragments is, I think, more mischievous than any amount of cautious search; for it is remarkable how much handling, and even mutilation, the brain will bear without serious consequence: whereas, the presence of a foreign body in its structure is likely to cause fatal extension of inflammation.

That fracture of the base of the skull is a recoverable injury I have no doubt. I have witnessed some cases in which the signs and symptoms of this injury were too well marked to be mistaken, and where a slow recovery followed. One skull, which was long in my possession, and is now in our hospital museum, shows the line of united fracture extending across the base of the skull. It is very unwise to lose sight of a case, where the existence of any description of fracture has been suspected, until a long interval after convalescence has elapsed: for such cases often develop insidiously some secondary mischief; especially where the patient may

have resumed previous habits of work : and more particularly ought abstemiousness in living to be strictly enjoined for a lengthened period. The possible supervention of delirium should be anticipated in all head injuries ; and its consequences, due to the violence of the patient, should be carefully guarded against.

I have seen several instances of indented skull in young children, followed by early recovery ; the skull resuming its normal form in two or three days. But these cases are not rare ; though somewhat alarming to the uninitiated.

Operations in general and their management.—The performance of operations and their after-management constitute an important section of the surgeon's work. In our hospital practice, so much is done for us in all the previous and accompanying arrangements for a capital operation, that we are in a measure spoiled for private practice in these respects. In the latter, the surgeon is thrown more exclusively on his own resources. But in either case he should make his own arrangements, assign to each assistant his special duty, see himself that every requisite preparation is made, every suitable instrument or appliance is at hand, so that he may want nothing, but be prepared for every emergency. Moreover, it behoves him as far as possible, by careful forethinking over an operation, to anticipate every contingency, so that any such may not come as a surprise, when delay might be fatal. I have always thought it a very wholesome practice to resolve every complex operation into its different stages, and to deal with each separately, without allowing the mind to be distracted by those which are to follow. No doubt some steps in every operation of importance are more critical than others ; but it should be remembered that every step has its own special importance and bearing on the final one, and therefore should be executed in the best way. The speed of an operation is surely of secondary consequence, and should never degenerate into hurry, the ultimate success of the operation and the safety of the patient being the far graver consideration. I am satisfied that the most rapidly executed operations are by no means the most successful. On the contrary, I could cite many instances in which the reverse of this has been the case ; and also where great success has vindicated

this opinion, in the hands of operators whose characteristic was deliberation even to a fault. "Sat cito si sat bene," and "Respice finem," should be the mottos of any surgeon who may be tempted to exhibit his skill by the rapidity of his handiwork.

When the requirements for arresting hæmorrhage, whether by ligature or torsion, have been attended to, has the time for closing a wound arrived? Scarcely yet, in my opinion. If a cut surface be carefully watched, the sanguineous oozing from numberless points will be seen to be gradually replaced by admixture of serum with the blood, until the former predominates. This is the natural step towards the sealing of the vessels by the deposit of a plastic film over the surface of the wound. And here, I think, the surgeon may afford valuable assistance in facilitating this process. For many years I have been in the habit of using, for this purpose, a mixture of equal parts of spirits of wine and water, with which I have freely sponged the surface: after this the wound may be carefully closed with sufficient sutures of silk, or still better of silver, to secure the accurate and perfect adaptation of its edges: and then I have felt it safe to leave the wound exposed, for its entire margin to be sealed, if I may so express it, by the plastic deposit hardening in the intervals between the sutures. I cannot but speak favourably of this mode of treatment, because I have experienced its value; though I am aware it will find favour with but few nowadays. At any rate, it is consistent with the most absolute cleanliness. If reaction brought with it an excess of local heat, I used to place over the wound a rag with evaporating lotion. Thus much for healing by adhesion of opposed surfaces or edges. Where a gap has to be filled by granulation the requirements seem to be, as in germination, warmth and moisture: with these should be combined means for the absorption of the discharge, with security for scrupulous cleanliness by frequent change of dressing. Nothing so satisfactorily fulfils all these desiderata as simple water dressing. Either soft lint or cotton wool may be employed for this purpose; and warm irrigation of the surface is both soothing and cleansing.

A few words on the general condition of a patient after operation will conclude these remarks. The reaction after

shock *generally* bears a certain relation to the amount and duration of the latter. It is delayed where the shock is great and prolonged, anæsthetics notwithstanding : and such is naturally the case where the loss of blood had been considerable. And not only is this reaction, as manifested both locally and generally, to be looked for, but, if not excessive, it is to be welcomed as a measure of nature's activity in commencing the work of repair. On the morning after a serious operation I should always regard with anxiety the announcement that my patient had no complaint to make, and the absence of the usual indications of general febrile disturbance. I would far rather find him with a quickened pulse, a raised temperature and heightened colour, signs of nature's resentment at the injury inflicted, and of her energetic resolve to repair the mischief. As I have remarked, I am speaking only generally : there are exceptional cases in which reaction is but slightly marked ; and others in which its excess is alarming. In each class the surgeon's resources are put to the test ; and I know of few better opportunities of evincing judicious discrimination than in the management of such cases. In fact, the result of a capital operation very often hangs on the watchful and discreet supervision of the first few days, especially in regard to diet and stimulants. A primary consideration is to keep the stomach in good humour, and this is best secured by taxing its services as little as need be, and by soothing any irritability it may manifest. If the kitchen be kept in order, it is much more easy to regulate the rest of the house.

Stimulants, unless absolutely needed by the condition of the patient, or from long-continued habit, are prejudicial : but if required, for the latter reason especially, the taste of the patient should be consulted, even as to the class of spirit or wine or beer to which he has been accustomed. I have often proved the value of attention to such a trifling detail in the case of habitual tipplers : the stomach will tolerate gin where brandy nauseates, porter where ale disagrees ; and the converse.

Moderation in diet should be the rule long after the early stage of repair is established : over-feeding springs from a mischievous popular fallacy, which is often, to the surgeon's

vexation, the explanation of serious relapses. It is needless to add that the action of the bowels should be carefully regulated.

Exploratory operations, &c.—An exploratory operation often clears up a doubt as to the nature of a disease. This may be accomplished with a grooved needle or small trochar: but I prefer a common lancet ground down to a fourth of its original breadth; just sufficient in fact to admit the introduction of a probe afterwards, if necessary. But not infrequently a free incision is required. For instance, it is not always possible to determine the nature of a mammary tumour: the resemblance in history as well as physical signs, between scirrhus and chronic abscess may render the diagnosis extremely obscure. This once occurred to myself, in a hospital patient, from whom I removed the breast, under the conviction that I was dealing with cancer: and others were deceived as well as myself. In this case no harm was done: for the induration surrounding the purulent cavity occupied part of the shrunken gland in an elderly woman; and she recovered more speedily than would have been the case under any other treatment. I have known similar obscurity to exist in other cases. Under these circumstances the best course is to make the first incision for removal of the breast, and to examine the tumour before proceeding further. The same remark applies to disease of joints: an exploratory incision may, where doubt exists, be made the first step towards resection or amputation, as the case may be. In removal of the breast the incisions are usually made with their concavities facing each other: I have found it preferable to make the upper incision with a convex edge directed towards the concave edge of the lower: the adaptation of the flaps, without puckering of the corners, is thus rendered more satisfactory. In large tumours, such as the fatty class, a single incision is generally all that is needed; skin should rarely be removed; for it is surprising how much the stretched integument gradually resumes its normal expansion, by its elastic contractility. This remark does not apply to the breast, where the excision of the gland requires a corresponding removal of skin.

Excision of joints.—This is a comparatively modern triumph of conservative surgery. Certainly very many limbs are now

saved which would have been sacrificed when I began my hospital work : sacrificed often not so much from a conviction of the absolutely irremediable amount of disease, as on account of the utter inability of the patient to endure the strain and exhaustion accompanying the reparative effort. It would be a bold assertion to affirm that no such casualty has happened as the occasional excision of a joint, which might have been saved under the old system of absolute and persevering rest. Although I have operated in many instances, and especially in resection of the knee-joint, I have but one general remark to make ; and that is, how very much importance I attach to the most scrupulous removal of every trace of diseased tissue. Too much time and care cannot be expended on this very material element of success. In speaking of this particular joint I may observe, that I have found the difficulty of keeping the osseous surfaces in exact relation is diminished by sawing through the condyles of the femur, in such a manner that the face of the section shall be convex, or rather present a very obtuse angle in the centre, fitting into a corresponding concave section or re-entrant angle of the tibia. This may generally be accomplished, and sometimes with advantage as regards the tibia, disease in which more often extends deeply than in the femur.

Imperforate and artificial anus ; exploration of rectum.—Most of the cases of imperforate anus that I have met with were only skin-deep, and required a simple incision for their relief. But this is not always the case, for the rectum sometimes terminates in a cul-de-sac, generally expanded, at some distance from the surface. One particular case of this kind, on which I operated many years since, I had the opportunity of watching throughout its long course. After searching deeply but in vain for the bowel, I obtained the father's sanction to risk the immediate death of the infant ; and by passing my knife upwards and to the left side I reached the bowel. I had the utmost difficulty in keeping the external opening from healing, by dilating it continually, and keeping a bougie in the artificial channel. The actual condition was this, as ascertained by repeated after-examination. The bowel terminated in a large sacculated extremity, in communication with which was the passage which I had formed, opening externally : this was, when the child grew older, about one and

a half or two inches long. When this channel was permanently established a new difficulty presented itself, which called for my oft-repeated interference, until the boy grew to be old and intelligent enough to take care of himself. For, in spite of aperients and parental supervision, the cul-de-sac became periodically loaded with indurated fæces, which I had to break up and get away with a scoop and by repeated injection of warm water. My patient is now himself a parent.

I learned a good deal from this particular case, and especially in exploring the rectum in obstinate constipation. This should never be neglected, and more particularly should it be insisted on, in the absence of symptoms indicating internal strangulation or malignant disease. In the female the examination may be assisted through the vagina. The worst case of obstruction of this kind that I have met with occurred in a young man whom I was requested to see in consultation. There had been no evacuation for six weeks, and his abdomen was as large and tense as that of a woman about to be delivered. Aperients and injections of various kinds had been used in vain. On passing my finger into the bowel, I could just touch with its extremity a large mass of fæces. Conjecturing that this was the cause of obstruction, I introduced the handle of a tablespoon along my finger and began the process of disintegration, repeatedly washing out, with an enema syringe, the detached fragments. It was a long and tedious process, but ultimately quite successful. As soon as this mass was broken up and removed the bowel was unsealed, and I should be afraid to form an estimate of the surprising quantity of solid and fluid matter that was discharged; for the injections had been retained, and were added to the natural contents of the intestine. The patient's condition was such that he could not much longer have survived without relief: and I am satisfied that nothing but mechanical disintegration of this large and indurated mass could have relieved him. I need not add that he made a quick recovery.

This blocked condition of the rectum I have occasionally met with in young children, just after weaning, and apparently due to the substitution of food containing a good deal of solid matter, for the previous fluid diet. The distressing straining

of the infant will suggest this explanation, and the hardened mass must be broken up as described.

An artificial communication with the bowel is sometimes established spontaneously or accidentally. In one instance the only interpretation I could put on the history of the case was, that a crural hernia had, when strangulated, been permitted to take its natural course; and this was an unusual one, viz. by sloughing of the intestine and subsequent abscess, opening externally. Of course this is very exceptional, and could not occur except where a portion only of the cylinder of the bowel was implicated. By persevering care this opening was ultimately closed. A similar condition occurred in a case of my own, where the adherent bowel gave way after operation. In this patient also I was fortunate in closing the sinuous track which led to the intestine, by the careful and long-continued employment of pressure. In a case of umbilical hernia, which had been opened, evidently under the conviction that it was an abscess, the patient died. The most remarkable case of this class that I have witnessed was also one which I attended in consultation. A large, indurated and inflamed swelling occupied the whole of one buttock and loin, and extended over the groin and left hypogastric region. At one point only, near the groin, was there fluctuation. An opening was made here, and the source of the mischief traced to the descending colon, from which fæcal matter escaped freely. It is needless to pursue the subsequent history of this case, which was in the hands of an able provincial surgeon. The patient rallied, and the artificial anus was established: but he ultimately died from some organic complication, when there seemed to be fair hope of recovery from this severe local mischief.

Dissecting wounds are, I believe, more rarely succeeded by serious consequences now than formerly, probably because of the antiseptic treatment of subjects for dissection. I can recall some fatal cases; and in the course of my long experience, as a teacher of anatomy, I have been a frequent sufferer myself, for I seemed to be peculiarly susceptible of the poison: so much so that I always kept materials for water dressing at home in my bedroom. The first sensation I experienced was that of tingling in some part of my hand, which

was often the earliest notice I had of any hurt, but which I knew was the precursor of mischief. I was always in the habit of incising a puncture as soon as I was aware of it, and of bleeding the part freely in hot water, before applying the water dressing. Sometimes I applied caustic, but I think this more often did harm than good. Scarlet threads traversing the arm, and enlarged axillary glands, with some constitutional disturbance, usually terminated my trouble: but I have had palmar abscess, and, on two or three occasions, a peculiar erratic erythema over the hand. This last condition I have witnessed in other instances, and it seems peculiar, in this form, to poisoned wounds. The most severe cases of these injuries I have met with were the most rapid: those in which the beneficent agency, whatever it may be, of the lymphatic glands is not interposed. The zymotic action of the poison, for such I suppose it must be, seems to be quick and unchecked, being favoured by a peculiar receptivity in some individuals, and often those who have the appearance of rude health: the constitutional symptoms are then severe, and death occurs early. In some instances I have known the poison to exhaust itself locally, by extensive sloughing of the arm, consequent on acute cellulitis. I have never experienced, personally, the ill effects of any specific poison, except that of a modified attack of smallpox, when an apprentice, from dissecting a subject which died of the disease. But then we were obliged to take whatever we could get from the only purveyors. Translation into a pure air, as soon as possible, is the most efficacious treatment of organic poisoning, whether from wounds or otherwise. A bold step in this direction is justifiable even in critical circumstances: I have known it to prove so in the result.

(To be continued.)

TREATMENT
OF
CANCEROUS OBSTRUCTION OF THE ŒSOPHAGUS BY
PERMANENT CATHETERISM.
ILLUSTRATED BY TWO CASES.

BY JOHN CROFT.

IN August, 1881, at the International Congress, Dr. Krishaber, of Paris, read a paper on the treatment of severe stricture of the œsophagus by the “sonde à demeure,” or permanent catheterism. The paper made a good deal of impression, as many surgeons were dissatisfied with the results of gastrostomy performed for obstruction of the œsophagus. Krishaber gave particulars of four cases in which he had kept up catheterism for 305 days, 167 days, 126 days, and 46 days respectively, giving an average of 161 days. Two were instances of cancer or malignant tumour of œsophagus, the nature of the other two cases is not precisely stated.

On November 11th of the same year, at a meeting of the Clinical Society, a paper was read by Mr. Golding-Bird on five cases of gastrostomy for cancer of œsophagus. This paper led to an interesting discussion, during which Krishaber’s advice and opinions were supported by Mr. Durham.

Krishaber alleged on behalf of catheterism :

1. That the œsophagus would tolerate the tube indefinitely ;

¹ Read at the April Meeting, Thames Valley Branch of British Medical Association.

2. that the permanent presence of the tube leads to the dilatation of the obstruction so far as to render it possible to introduce larger and larger tubes as in treating strictures of the urethra ;

3. the prolonged presence of a gum-elastic tube at last permits the introduction of a soft, flexible, india-rubber tube ;

4. alimentation is insured and false passages are avoided ;

5. the tube should be passed by the nose, and not by the mouth.

Gastrostomy is best performed in two stages :—1st stage, to secure adhesion between the stomach and the wound in the abdominal wall ; 2nd. to open the stomach.

Gastrostomy may be performed successfully at one operation in a moderately strong subject if the lips of the stomach opening are closely sewn to the opening in the abdominal wall.

For successful gastrostomy the patient must be in a state of health to bear the first stage of the operation, to wait for four or six days for the completion of the operation, and meantime make active reparative progress in the wound.

If the state of the patient is such as to demand *immediate* relief by opening the stomach, he is almost certainly not in a state which offers a reasonable prospect of healing a wound.

Successful gastrostomy does not afford a more permanent relief to the subject of cancer of the œsophagus than permanent catheterism.

This operation has been performed for fifty cases of obstruction due to cancerous disease (see ‘ Holmes’ System of Surgery,’ last edition, vol. i, p. 800).

6 lived	{	1 lived upwards of three months—how much
3 to 6		longer I do not know.
months.		3 lived four months.
		2 lived three months.
		4 lived one month or longer.
		14 lived one week or longer.
25 survived	{	10 lived less than a week and more than forty-
less than		eight hours.
a week.		15 lived less than forty-eight hours.
		1 result not ascertained.

Œsophagotomy is of very limited application, and cannot be compared with either gastrostomy or catheterism.

Of the *two* cases handed over to me by my colleague at St. Thomas's, one was a case almost dead of starvation, too weak for immediate gastrostomy, and too feeble to endure for a week whilst the modern two-stage operation was conducted.

The other case was one in which I did not think such a severe measure was immediately called for; I thought I ought to be able to succeed by catheterism.

E. L., æt. 45, admitted under Dr. Stone November 29th, 1881, came under my care December 20th. Passed No. 5 tube December 20th. Died May 19th, 1882, from tracheal tube slipping out.

When I first saw her she was hollow-cheeked, losing flesh, and unable to swallow any solids. A good deal of fluid nourishment always regurgitated with mucus. Had had difficulty in swallowing three months, and was unable to swallow solids. Attempts had been made to pass bougies and tubes but without any success. In the situation of the thyroid body a small hard tumour was felt on the left side. This did not interfere with the trachea. The diagnosis was cancer of œsophagus.

On endeavouring to pass a tube or finger into the pharynx, an extraordinary amount of muscular resistance was experienced. An anæsthetic was therefore administered. A definite obstruction at the junction of pharynx and œsophagus was found. By patience and care I was able to pass a tube of the calibre of No. 5 catheter (English gauge) through the obstruction and into the stomach. This was kept in four days. She was easily fed by it and rapidly improved. On removing it I found it easy to pass No. 8 into the stomach. This was well tolerated. I next tried No. 12 catheter, and that was borne pretty well. Next No. 16 was passed on the 12th January. This large tube was not well tolerated, and was therefore replaced by No. 12. After this we found that No. 8 set up the least irritation, and was a tube of very convenient size for feeding.

She improved in condition and got up and went about the ward. She spat up some mucus, but beyond that the irritation did not extend. There was not more mucus than in ordinary cases of œsophageal stricture. The tumour in the neck slowly increased in size, and remained very hard, about the size of a walnut on the left side.

March 2nd, about two and a half months later, the report notes that she was then complaining of dyspnoea, and had suffered an attack of extreme difficulty of breathing from a spasmodic affection of the larynx. As this recurred and a troublesome cough continued, I was of opinion that the recurrent laryngeal nerve was now involved in the œsophageal growth. I performed tracheotomy and inserted a tube. She now wore the œsophageal tube by which she was fed, and the tracheal tube. The growth extended and the ordinary tracheal tube of red rubber proved not long enough to reach below the growth. This became very evident by the slipping or squeezing out of the tube and consequent extreme dyspnoea. A longer tube was ordered to be made and inserted, but before it had been procured she died suddenly in the middle of the night of the 19th of May, 149 days from the time I first put in the œsophageal tube, and seventy-three days after the tracheotomy. She might have survived some weeks longer had not that accident occurred.

The post mortem revealed firm and compact growth of epithelial cancer surrounding the top of the œsophagus and involving the back of the trachea just below the cricoid cartilage, implicating both recurrent laryngeal nerves. There was not any ulceration of growth, nor inflammation around, nor signs of the tube having irritated the growth. The stomach was not ulcerated. A patch of ecchymosis was noted remote from the œsophageal end.

CASE 2.—W. Sidebotham, æt. 42, admitted under Dr. Stone October 9th, 1882. Came under my care November 9th. Bougie No. 6, catheter gauge, November 11th. Lived until March 8th, 1883, or nearly four months. Died of extension of disease and consolidation of left lung.

When I saw him in consultation with Dr. Stone, he had been unable to swallow solid food for upwards of five months. He was hollow-cheeked, pale, and emaciating. Faint on sitting up, unable to swallow any solid and scarcely any fluid.

The obstruction had been found at the gastric end of the œsophagus. It was no doubt malignant in character. Attempts had been made to pass the ordinary œsophageal bougies and tubes, but without any success. I was asked did I not think

gastrostomy was the suitable remedy? I did not think that the man in his then condition could undergo the operation with any prospect of success. He was so weak that union between the stomach and the wound was improbable, and he was too ill to wait four or five days until the modern operation (of two stages) could be completed. I determined to attempt to pass a fine tube into the stomach as I had done in the former case. I would make the attempt carefully, gently, and if necessary under an anæsthetic. The patient was moved down into my ward at my request. Without loss of time I proceeded to pass an instrument. I failed to pass a fine *tube* but succeeded in introducing a fine *bougie* not larger than No. 6 catheter, through the obstruction into the stomach. I felt it pass by the side of one obstruction. No bleeding caused. Having got it in I left it there. He was diligently fed with enemata of beef tea and brandy by the rectum, until the following morning. On that morning I succeeded in passing a tube of the same size as the bougie, a No. 6 catheter gauge. For the time the man's life was saved. He was fed freely and carefully with beef tea, milk, stimulants, and now and then a sedative was given. The tube was changed every fourth or fifth day, sometimes a larger, sometimes a tube of the same size was used. In about a week's time he *could swallow fluids* by the side of the tube. He brisked up, his eyes brightened, his pulse improved. He gained flesh at the rate of one pound or more per week, but was too weak to walk about. At the end of about four weeks he begged to be allowed to have the tube out, he felt so certain that he could swallow without it. It was left out for twenty-four hours; he swallowed easily, indeed, took fish and vegetables. This was the man who had been condemned to gastrostomy a month back. He was encouraged to be up and he enjoyed moving about. Details of the future progress would be tedious. He felt pain at the epigastrium but no tumour could be felt there, nor did he suffer from sickness. He ceased to gain flesh. *After* the second month he began to decline in strength and to lose flesh. A cough became troublesome in February, and he began to expectorate muco-purulent fluid but it was not offensive.

March 1st.—Evidences of lung disease and dulness about the lower part of the right lung were observed. I was satisfied

that the malignant growths were extending or multiplying, and did not entertain any intention of gastrostomy. Indeed, the history of the tube did not indicate any necessity for the operation. He could pass the tube for himself, but the house surgeon or dresser generally passed it for him. On three or four occasions I was called upon to give my assistance as the tube could not be passed. I always succeeded without much difficulty, or, at any rate, with a little care and ingenuity. No 8 was the one employed up to the time of his death. He could even *swallow* fluids without the help of the tube up to the time of death. He died from extension of the cancer and from implication of lung, liver, pancreas, lymphatic glands by disease and not from injury, having worn the tube almost continuously for 108 days. Successful gastrotomy could not have cured him, and at best could not have prolonged his life materially.

With regard to *experience of details of this treatment*, I may arrange them under the following heads:

I. Tubes, their material and size.

II. Passing, retaining, and changing them.

III. Administering nourishment.

IV. Effects of tubes on alimentary canal (mouth, pharynx, œsophagus, stomach).

I. *Tubes, their material and size.*—It is necessary to have tubes of various materials, soft, pliable, like the French black catheters, gum-elastic tubes, tubes straight, elbowed, and tubes with bulbous ends. One tube may not be passed, but another may prove successful. In size they should range from No. 5, English catheter gauge, to No. 12 ditto. Less than No. 5 seems unmanageable owing to its great length, and larger than No. 12 is not well tolerated by the patient; 6 and 8 are easily worn.

II. *On passing, retaining, and changing them.*—I have found it easier to pass them by the mouth; one can thereby have the advantage of the help of a finger point at the back of the mouth. No rule can be laid down with regard to passing by the left corner of the mouth or over the centre of the tongue. In the second case I was more successful when I passed it in the usual manner as far as the obstruction, and then from patient's right hand to his left. In the first case I was successful when I

passed the tube in the median line of her body. If you cannot succeed in one direction try another, always gently, patiently, but without feebleness.

The tube once passed is easily retained by a strip of strapping across the cheek, or a loop of tape round the forehead or *over the ear*. It is convenient to have a funnel-shaped opening. This should be plugged with cotton wool before passing to keep out air, and between feeding must be plugged. When the tube has not any funnel, fix on a piece of india-rubber tube that can be easily closed in various ways.

The patient should not pass the tube for himself as a rule.

These tubes should be changed about every fourth or fifth day. If the gum elastic tube is in use and is not good it will certainly want changing. They wear out, roughen, soften, &c.

Before a tube is reinserted it should be carefully disinfected and rendered aseptic, or it will convey into the stomach agents of putrefaction (and set up diarrhoea perhaps).

III. *On nourishment.*—I need not expatiate on the materials as every one knows about them. Small quantities pretty frequently administered are found best suited to patient's powers. Peptonoids were employed in the second case with some advantage.

IV. *Effects of the tube on the alimentary canal.*—The first presence of the tube in the first case set up retching, but I believe it was because the tube was passed too far into the stomach; it was a long flexible tube, and no doubt doubled on itself in the stomach. She soon became tolerant of it after some of the length had been drawn out. No such irritation was set up in the second case. The *œsophagus* and the obstructed part bore the tube remarkably well; no pain, or suppuration, or muco-purulent discharge, or bleeding.

Each patient complained of irritation to the back of the tongue after the tube had been in for some days, say eight to twelve. The bigger tubes and gum elastic tubes especially were complained of. To relieve this the patient begged to have tubes changed. This was the only irritation caused. I have no experience of keeping the tube in by the nostril. Perhaps that avoids pressure on the tongue, but it would keep the nostril irritated and upper surface of soft palate.

In neither case did the tube set up any inflammation or sore-

ness in the stomach. At the post-mortem examination, in the first case, an ecchymosed patch was observed, but not at the cardiac and œsophageal end of stomach, and no irritated places were found near the œsophageal entrance. In the other case no irritated places were observed.

Diarrhœa was observed in the second case, but this was due to other causes than gastric irritation. During his coughing he occasionally brought up a mixture of mucus and food. He sometimes fed himself by the mouth and consequently coughed up mucus and food. This occurred latterly.

At the post-mortem examination of first case no trace of local irritation was found in the œsophagus at the obstruction. In the second case the growth was found to have extended into the lung, and there to have broken down into a mass like suppurating grey hepatisation. I cannot say positively that inflammatory action had not been set up by the tube, but I do not believe that the tube was the cause of it. During the latter part of his life he had swallowed food spontaneously without the catheter and by the side of it. He had also passed the tube for himself. It is possible, therefore, the clumsy attempts to pass the catheter and his swallowing food, some of which had lodged there, may explain the broken down state of the growth and lung. *No food* was found there.

No doubt there are cases suitable for permanent catheterism, and some which are unsuitable for this treatment. I have not had experience of a bad case of obstruction of œsophagus, one made by large, irregular, ulcerated, bleeding, soft cancerous growths. That would be a very difficult case to manage. The difficulty of picking one's way down through the obstruction without leaving the main channel, without getting into a siding as it were, and without making a false passage, would be very great, but once accomplished the advantage would be very decided. A patient in that state would not be one favorable for such an operation as gastrostomy.

In some cases gastrostomy would be preferable, and in some permanent catheterism.

I venture to state, in agreement with and in addition to the five formulæ of Dr. Krishaber, that the advantages of permanent catheterism are:

1. That it can be safely performed in moderately early

obstruction by epithelial cancer, whether at the upper or lower end of the tube or any intermediate point.

2. That the operation is not intrinsically a dangerous one.

3. That it may be performed when there is not a reasonable prospect of gastrostomy proving successful.

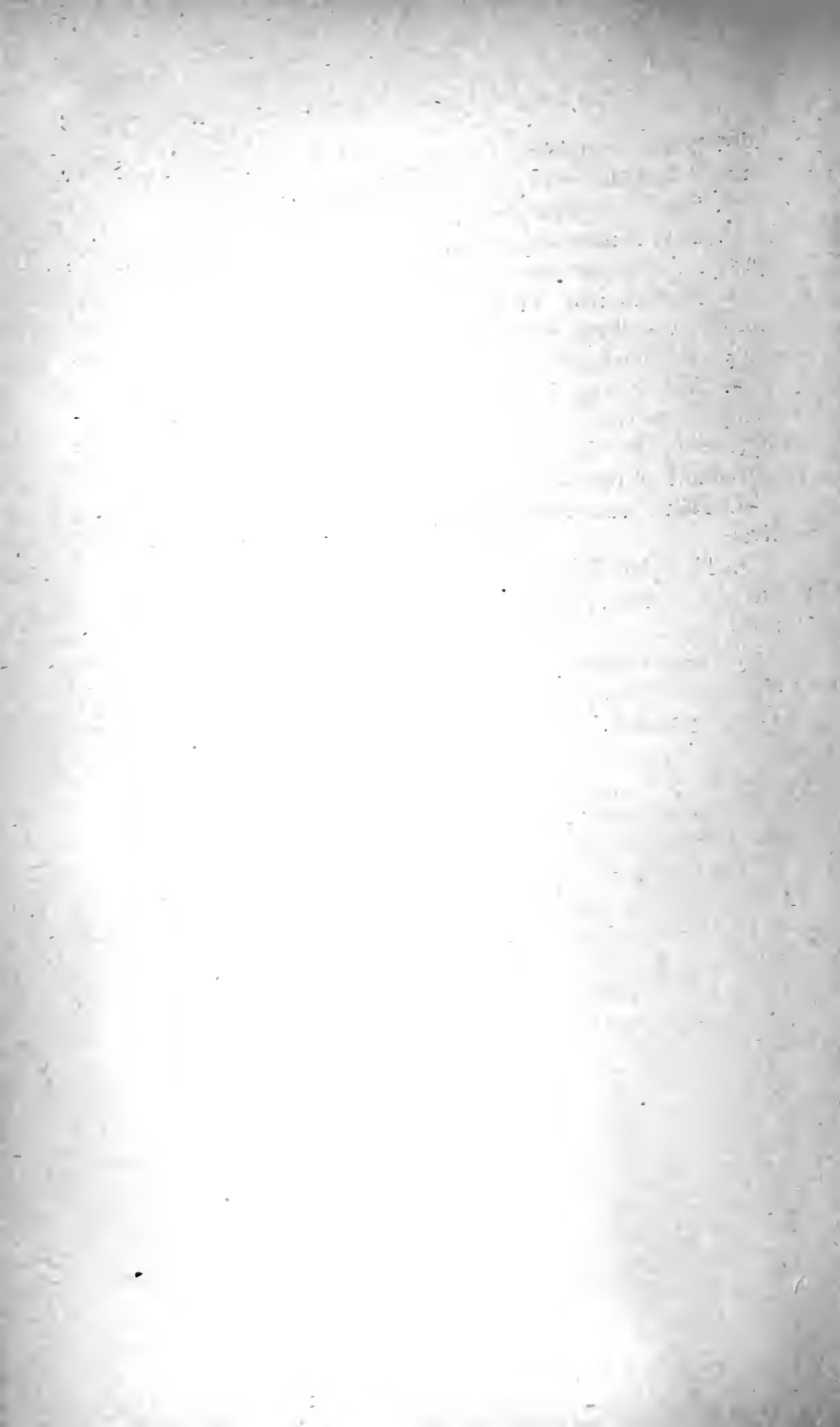
4. That it may be performed with immediate beneficial results, which are impossible to the two-stage gastrostomy and only probable in the old-fashioned mode of operating.

5. That it may be performed as a *preliminary* to gastrostomy when the latter is, for certain reasons, the preferable operation, but the present very low state of the patient does not admit of its immediate performance.

6. That it can be continued indefinitely so long as the patient lives.

7. That the risks attending the practice are few in number, and not severe when the case is conducted by a careful medical man.

In short, if rightly conducted it may prove a useful improvement in surgical practice, and a great boon to a very suffering class of patients.



TWO CASES

ULCERATIVE ENDOCARDITIS

FOLLOWING AN ATTACK OF

ACUTE PNEUMONIA.

BY G. GULLIVER, M.A., M.B.

THE following cases came under my care whilst I had charge of Dr. Harley's beds in the autumn of 1881. I will first give a brief account of them, and append a few remarks, calling attention to what appear to me to be their chief points of interest.

CASE 1.—A. W—, tinplate worker, admitted July 22nd, died August 24th. Patient thought he had been getting weaker for the last twelve months, but continued his work until a fortnight ago, when he was suddenly seized with shivering, vomiting, and cough, with what he himself described as rusty-coloured expectoration. The acute symptoms had now subsided but he still had a cough, and was very weak. His previous health had been very good excepting that he had had two attacks of rheumatic fever, the first when he was eighteen years old, and the second three years ago. The family history was remarkably good. On examination the patient was emaciated, and complained of cough and weakness. Heart: impulse imperceptible; dulness not increased sounds feeble, unattended by murmur. Pulse

90, weak. Temp. normal. Lungs: dulness with tubular breathing and moist crepitation over upper half of right back; anteriorly, crepitation below right clavicle with impaired resonance. Left lung normal. Tolerably copious muco-purulent expectoration. Respirations 28. Appetite fair; bowels regular. Tongue red, dryish, and cracked. Nothing abnormal detected in abdomen. Urine normal.

The diagnosis was that the patient was convalescent from an attack of acute pneumonia of the right apex. For the first four days his condition was much the same, and the physical signs did not alter. His temperature remained normal, but he was very weak, perspired a good deal, and his tongue did not become clean. On the 28th he had a slight shiver and his temperature went up to 100.5° . On August 1st he had a very severe rigor, during which his temperature reached 105.4° and which was followed by profuse perspiration. From this time till his death he had almost daily rigors more or less severe, and generally occurring about noon. On the 5th he complained of pain in the left side, and some pleuritic friction was detected in the axilla. On account of the lung affection from which he was suffering, it was thought that the rigors were probably due to an empyema being in process of formation. However, as no evidence of this could at any time be obtained, his heart was examined again on August 12th, when at the apex a systolic blowing murmur was detected. On the next day a double murmur, systolic and diastolic, was heard at the base, and it was noted that the systolic murmur at the apex was louder and more prolonged. From this time there was no doubt as to the case being one of ulcerative endocarditis. A few days before his death he had some loss of power in the left leg, and it was noted that the signs of pneumonia at the right apex still remained. He was unconscious during the twenty-four hours preceding his death.

Post-mortem examination.—Body much emaciated.

Pericardium.—Normal except for a patch of old fibrous adhesion the size of a shilling on anterior surface.

Heart somewhat enlarged, weighed fourteen ounces. Right side contained a quantity of recent clot; valves normal. Aortic valves incompetent. Two of the cusps were glued together by a large mass of vegetations adherent to them. It was opaque,

yellowish-white in colour, soft and friable, and about the size of a hazel nut. Its origin was evidently of pretty recent date. Mitral valve also incompetent. There was attached mainly to the outer cusp, a large vegetating mass precisely similar in character to that on the aortic valve but larger. Entangled in the valve was a quantity of quite recent, pale, translucent fibrin. The vegetations were not removed as the specimen was kept for the museum.

Pleuræ and lungs.—Left pleura normal; lung very œdematous. Right pleura adherent throughout its whole extent. The whole of the upper lobe and a small portion of the lower lobe of the lung was consolidated. There was no softening anywhere. The consolidated part was granular on section, of a very dull-red colour, and easily broken down by the finger.

Spleen and kidneys contained infarcts.

Brain.—Surface generally congested, convolutions somewhat flattened, substance congested; ventricles contained an excess of serum which was turbid, and their walls were generally soft, and in parts broken down. The floor of the posterior cornu of the left ventricle was especially soft, the branch of the posterior cerebral artery corresponding to it being blocked by thrombus. No aneurysms found.

CASE 2.—G. L—, æt. 40, chairmaker, admitted August 10th, died September 14th, was quite well till the evening of the 7th, three days before his admission, when he was suddenly taken ill with shivering, giddiness, pain in the stomach and right side, and cough, which symptoms had been increasing in severity till the day of his admission. Before this his health had been generally good, excepting that he had had smallpox when twenty years old, and rheumatic fever “when young.” The family history presented nothing remarkable.

On admission he was fairly nourished, complaining of the symptoms of fever with cough and pain in the right side.

Heart: impulse neither seen nor felt; no absolute dulness; sounds weak and indistinct; no bruit. Pulse 100, weak; temp. 103°. *Lungs*: left normal; dulness over upper third of right back with tubular breathing and crepitation, and the same was the case above the clavicle in front. Some friction in

axilla. He was expectorating the viscid rusty sputum typical of pneumonia. *Abdomen* appeared natural. Tongue dry, brown. Bowels loose. Urine contained a trace of albumen.

His condition and the physical signs remained about the same till the evening of the 15th, the eighth day of his illness, when his temperature sank to normal. Previous to this it had constantly been elevated, varying from 100° to 103.5° . He was now considered to be convalescent from his attack of pneumonia. However, his condition was not satisfactory. The temperature remained normal for the next five days, but he did not regain strength, he perspired much, and his tongue was foul and coated. On the evening of the 20th his temperature went up to 100.5 , and afterwards was somewhat elevated nearly every evening, till on the morning of the 30th, he had a rigor and his temperature reached 105° . The next morning he had another rigor. On that day it was noted that there was still dulness over right back, especially at upper part, with moist crepitation and increased vocal fremitus and resonance, also there were signs of bronchitis. A short musical systolic murmur was heard, most intense over the fourth left costal cartilage. It was then diagnosed that he was suffering from acute endocarditis affecting the aortic valves. From this time till his death, a fortnight afterwards, he had frequent elevations of temperature, with chills and sweats, but without distinct rigors. The aortic murmur became louder, and was conducted to the right, the lung sounds remaining much the same. His death was preceded by two attacks of convulsions.

Post-mortem examination.—Body emaciated. *Heart* enlarged, weighed 17 oz. The enlargement appeared fairly uniform. Valves of the right side normal. Attached to ventricular surface of posterior flap of aortic valve was a large prominent friable vegetation the size of a marble, causing great obstruction, but not regurgitation; mitral valve normal. The left ventricle contained a large quantity of recent clot. *Pleuræ and lungs*: both pleuræ adherent throughout. In the left lung the bronchi were inflamed. The upper lobe of the right lung was consolidated, the tissue being very firm and dense, but everywhere crepitant. The condition of the lower lobe was similar but not so marked. *Spleen* enlarged. *Kidneys* contained old infarcts. Brain normal.

Remarks.—It will have been seen that the foregoing cases presented a remarkable resemblance to one another, not only, as one would expect, in the symptoms of the disease from which they both died, but also in the season of occurrence and general course of the maladies from which they suffered. Both patients were fairly healthy men, of about the age of forty, and in each case the fatal illness supervened suddenly towards the end of the summer of the same year, with an attack of acute pneumonia affecting the right apex. In the second case the fever and symptoms attending this were observed during the greater part of their course, the former subsiding in the usual way on the eighth day. In the first case which came into hospital at a somewhat later period from the commencement of the illness, the physical signs and post-mortem appearances placed it beyond all reasonable doubt that the illness had begun in the same way. After a short and deceptive period of convalescence from the attack of pneumonia, acute endocarditis was in each instance ushered in by rigors, and rapidly in the course of a few weeks proved fatal. Though both patients had had acute rheumatism, they had not before admission suffered from symptoms of cardiac valvular disease, nor was any evidence of this observed on admission, though the heart in each instance was noticed to be feeble. It cannot be stated conclusively that some murmur indicating valvular disease may not have been overlooked, and the fact that the heart in each instance was somewhat hypertrophied, rather tends to show that there probably was some pre-existing lesion; and it was somewhat unfortunate that the preservation of the hearts for the museum prevented a thorough examination as to this point. All that is contended, however, is that the attack of acute pneumonia cannot be regarded as a mere complication, such as occasionally supervenes in the more advanced stages of heart disease; and in the second case the only lesion, aortic stenosis, whether altogether recent or not, is one in which such a complication rarely occurs.

On the whole it seems fair to regard the pneumonia as having the same origin as the endocarditis. Supposing that the latter is dependent on the presence of organisms, as there is evidence to show that it is, may not the pneumonia in such cases as these, if not in all cases, arise from the same cause? In cases

of this nature other inflammatory conditions besides those of the heart and lungs have been observed, and in the first of the foregoing cases there was post-mortem evidence of inflammation of the brain, which must have supervened shortly before death, though I am not aware that meningitis had been observed in other cases. Moreover, in addition to the common occurrence of infarcts, a diseased state of the kidneys, exactly resembling the common "large white" kidney, is by no means unfrequently seen in cases of ulcerative endocarditis. Thus in three out of five cases which occurred in this hospital during the year 1880, and which were specially tabulated by me in the statistical record for that year contained in the last volume of our 'Reports,' the kidneys are stated to have been of that character.¹ Whether the change is entirely one affecting the tubes, or in part also interstitial, I do not know. In these cases it has occurred to others and myself to reflect as to which was the primary disease, the endocarditis or the nephritis. Now, however, I should be inclined to regard them as independent, the one not as a complication of the other, but as an independent manifestation of the effects of the same poison whether it be septic or not, which may affect the endocardium, the lungs, the kidneys, and perhaps other organs, either separately or simultaneously.

¹ 'St. Thomas's Hospital Reports,' vol. xi, pp. 219—221. For a more detailed account of one of these cases see also a paper in the same volume on "Paroxysmal Pyrexia," by Dr. Ord.

ON

PARAPLEGIC RIGIDITY IN HEMIPLEGIA,

By W. B. HADDEN, M.D., M.R.C.P.,
DEMONSTRATOR OF MORBID ANATOMY AND MEDICAL REGISTRAR TO
THE HOSPITAL.

IN this short paper I wish to call attention to a condition which occasionally supervenes in the course of hemiplegia. This condition is not only interesting theoretically, but is a matter of some concern to the patient himself. It has long been known that in cases of ordinary cerebral hemiplegia there exists a certain degree of feebleness of the extremities on the same side as the lesion in the brain. The more recent the hemiplegia the more marked is this paresis.¹

In short, a lesion in one cerebral hemisphere gives rise to direct as well as to crossed paralysis. The former is usually slight and transitory, whereas the latter is well-marked and not unfrequently persistent.

Now it sometimes happens in late hemiplegic rigidity that the lower limb on the opposite side becomes the seat of ankle-clonus, and occasionally even becomes contracted like its fellow, though to a less degree.

This is by no means a constant occurrence. It is comparatively rare and perhaps depends on individual peculiarity. On

¹ See a recent paper by Pitres, "Note sur l'état des forces chez les hémiplégiques," 'Archives de Neurologie,' No. 10.

the other hand, it always appears to me that the tendon-reflexes of the non-paralysed leg are exaggerated in hemiplegic rigidity, whereas the tendon-reflexes of the arm are little if at all affected. Pathologically speaking, exaltation of the tendon-reflexes, ankle-clonus, and rigidity may be considered as allied phenomena. They indicate the same thing, that is to say, an over-activity of the spinal motor cells.

The arm, as a rule, suffers more than the leg in hemiplegia, and almost invariably recovers power later. This depends, as Dr. Broadbent has shown, on the more intimate connections which subsist between the nerve-nuclei presiding over the movements of the lower limbs.

The arms, unlike the legs, act almost independently one of another, and hence the motor nerve-cells which control their movements are not closely associated.

There is, then, a sympathy, to use a conventional term, between nerve-cells which preside over harmonious actions on opposite sides of the body. When the functions of one nucleus is inhibited the corresponding nucleus on the opposite side is also affected. The converse is also true. The nucleus secondarily involved soon recovers from the shock and exerts a healthy influence on its fellow.

This state of action and reaction may, I think, be aptly compared to the scales of a balance. The slightest touch temporarily disturbs their poise. The ruder the shock the longer it takes for the restoration of balance. A weight in one scale, however small, permanently affects the nice adjustment, and the inequality is in direct relation with the disturbing force.

The paralysis of the arm and leg in hemiplegia is often temporary, because the lesion does not involve a vital part; but when the motor tract is interrupted and contracture hence supervenes the condition is permanent. The spinal nuclei on the sound side are no longer able to stir up the energy of their diseased fellows.

To speak figuratively, there is a weight in the scale.

The foregoing considerations are by no means foreign to the subject I have in hand. I wish to illustrate by a few clinical cases the following fact, which is really only an application of Broadbent's law.

In bilaterally associated nerve-nuclei, irritation on one side, as in the case of inhibition, reacts on the opposite side.

The term "irritation," although convenient, is not beyond reproach, but its meaning will be made sufficiently clear hereafter.

Rather more than a year ago a man, forty years of age, came under the care of Dr. Bristowe for cirrhosis of the liver. I accidentally found that there was well-marked ankle-clonus on both sides, and on further investigation I discovered that the patient had been attacked with left hemiplegia eleven years previously. The arm, as far as I recollect—for no note of this condition was made at the time—was not manifestly paralysed. The man subsequently died, but unfortunately a post-mortem examination was not allowed.

Now, this case, imperfect as it is, was highly suggestive. Was the condition of the legs due to a spinal degeneration consecutive to the lesion which caused the hemiplegia? If so, why should ankle-clonus be present on both sides and not on the paralysed side only?

I pass over the case because the data are so slight that no justifiable conclusion could be drawn.

The next instance is far more decisive. At the latter end of last year a woman, aged fifty-seven, came under the care of Dr. Harley for an attack of left hemiplegia which had occurred six days previously. A month after admission I found that ankle-clonus existed on both sides, but more especially on the left, and that the tendon-reflexes of the left arm were manifestly exaggerated. The reflexes of the right arm, however, were less evident than usual, and on several occasions could not be obtained at all.

The left lower extremity was decidedly rigid, and when she walked there was also a certain degree of stiffness of the right leg.

In this case, then, we see the existence of rigidity affecting not only the side primarily paralysed, but also the opposite leg, the right arm being unaffected.

A case described by W. Müller is a good example of the effect of a unilateral lesion giving rise to double descending degeneration.

The patient, a man æt. 21, was stabbed at the level of the

fourth dorsal vertebra. The whole right antero-lateral column and both posterior columns were cut through at this point.

His symptoms were as follows:—Anæsthesia with preservation of movement on the left side, hyperæsthesia and paralysis of the leg on the right side.

He died in about six weeks, and at the autopsy there was descending degeneration not only of the entire right antero-lateral column, but also of the left pyramidal tract.

I take this opportunity of alluding to a case which, I believe, is explicable on the hypothesis of a double spinal lesion consecutive to a primary unilateral cerebral affection.

The case was published with remarks in the 'British Medical Journal' for February 18th, 1882.

The patient was a boy, æt. 13, who had been subject to fits since he was one year old. He had a fall when he was three years of age, and since then, according to his friends, he has been paralysed in both legs and one arm.

There is, however, good reason for doubting the effect of the injury in causing his present condition. It must be remembered that the fits, which began in the right hand, existed long before the occurrence of the accident. The right upper extremity was much smaller than its fellow, the ulna being an inch shorter than the bone on the opposite side. The muscles were much atrophied, but the tendon-reflexes were much more marked than on the left side. The hand, too, which was very small, was manifestly enfeebled. The left upper extremity was in every respect natural. The legs, especially the right, were rigid, the thighs were strongly adducted, and there was double talipes equinus. The patellar-reflex was exaggerated and there was ankle-clonus on both sides. When he walked he brought each lower limb forwards by describing an arc with the convexity outwards, at the same time throwing the head and shoulders well back and swaying the body powerfully from side to side, so as to maintain his equilibrium during progression.

I thought at the time and still think that this boy was the subject of a cerebral lesion on the left side, although the secondary spinal effects partially overshadowed the true nature of the disease.

It is probable that the case was originally one of right hemiplegia with rigidity, and that the left lower extremity

became affected secondarily by extension of the irritative state of the spinal motor cells in the right lumbar region to the opposite side.

A very similar case has since come under my notice in Dr. Bristowe's wards. The condition of the legs and the gait were nearly the same as in the patient just alluded to, and in addition there was marked atrophy of the terminal phalanges of the left hand. These cases lead me to mention a fact which, although apparent in every-day practice, has never been distinctly formulated as a law.

Bilaterally associated nerve-cells seem less apt to undergo atrophic changes than cells not bilaterally associated. To this it must be added that the smallest muscles are attacked early because in all probability they are presided over by proportionately small nerve-cells, which would necessarily have a less resisting power than nuclei of larger size.

I will mention in support of this the case of progressive muscular atrophy, in which the small muscles of the hand are, as a rule, first affected.

Again, in late hemiplegic rigidity, when trophic changes occur in the muscles, as occasionally happens, the muscles about the thumb and the interossei are generally picked out.

In amyotrophic lateral sclerosis the arms soon become wasted, but the legs are involved late and sometimes not at all. The pyramidal-tract fibres are in all probability in direct relation with the spinal motor cells. Each fibre ends in a cell. In descending sclerosis the cells are kept in a constant state of over-action which reveals itself clinically by permanent rigidity. These motor cells as a rule have great resisting power and rarely take on atrophic or inflammatory changes. But when they do, as I said before, those cells are attacked which are not intimately connected with those on the opposite side. The weakest, too, that is to say the smallest, first succumb.

It seems to me not unlikely that when cells are bilaterally associated they lend energy one to another. They are like so many roped mountain climbers. The safety of one depends on the preponderating strength of the rest.

There is then between bilaterally associated cells a solidarity, an interdependence, which gives to each a resisting power to atrophic changes, which one alone does not possess.

But to revert to the occurrence of paraplegic rigidity in hemiplegia. What is the explanation of this fact? It is very possible that it depends on some individual peculiarity, the motor cells in the lumbar region being more closely connected in some persons than in others.

Charcot has put forward the hypothesis that the motor fibres, which have already decussated at the lower part of the medulla oblongata, undergo a partial and variable decussation in the dorsal region.¹ This has not yet been proved pathologically, although certain histological researches of Schiefferdecker's lend it some support. It is well known that the decussation of the pyramidal-tract fibres in the medulla is liable to great variations. Sometimes all the fibres cross to the opposite side of the cord, sometimes none cross; but usually about 90 per cent. decussate and 10 per cent pass down on the same side.

These latter, which are called the column of Türck or direct pyramidal tract, gradually diminish in number as they descend, and generally disappear about the middle of the dorsal region of the cord.

Now, it seems to me probable that these motor fibres enter into relation with the multipolar cells in the lumbar region. Possibly as they are lost to sight in the anterior column they dip into the cord and pass downwards on the same side.

The occurrence of paraplegic rigidity in hemiplegia is readily explicable on this hypothesis.

It would be necessary to assume that a larger proportion of motor fibres than usual have passed through the medulla without decussating.

This seems to me a much simpler hypothesis than the assumption that fibres which have already crossed in the medulla should again pass over to the opposite side.

It is well to bear in mind, however, that this is eminently a practical question, which will doubtless be solved by actual demonstration at no very distant future.

¹ 'Leçons sur les localisations dans les maladies du cerveau et de la moelle épinière,' p. 356.

SOME EFFECTS
OF
BRAIN DISTURBANCE ON THE HAND-
WRITING.

By W. H. STONE, F.R.C.P.

It is not surprising that affections of the cerebral hemispheres competent to interfere with the complex co-ordination of speech should also show their influence on the very similar act of writing. Essentially both functions are acquirements, like walking and playing the piano, which have by long practice become automatic; so that although the mechanism intermediate between the idea, and its expression to the ear or to the eye comprises several stages all originally voluntary and distinct, we have entirely lost consciousness of the various efforts of will which in each stage we instinctively put forth.

The same process obviously takes place when we read. The wrinkled black line of handwriting, or the angular and conventional symbols of printer's type are so instantly converted into ideas that we most of us experience an odd feeling of disappointment and blankness when the writing turns out to be German or the letterpress Russian print. The sensation is much the same as that of deafness or misconception; whereas

the real defect of comprehension is quite at the other end of the co-ordinate chain; namely in the strangeness and unfamiliarity of the symbols brought to focus on the retina. To the telegraph clerk the wavy line of ink-spurts given by a Thomson recorder is a living speaking personality; and so evidently were the rapidly varying clicks of the Morse sounder to the man who smashed his instrument in a fit of rage when his brother-operator swore at him "through the wires" in the Morse alphabet.

Now as the defect known as aphasia, aphemia, or amnesia may occur in different parts of the circuit, so probably may agraphic modifications. It has seemed worth while to record briefly three such; one of which has recently occurred to me personally, two others within my immediate experience. Of all three I am able to give excellent facsimiles by the process named Dallastype, which in such cases is accurate, expeditious, and economical.

The first and simplest occurred in my ward at St. Thomas's Hospital.

R. Romeo T. Walton was admitted on September 1st, 1882, for right hemiplegia and aphasia. He was understood to have found on awaking from sleep on the morning of the 11th August that his right side was paralysed, and that he had lost the power of articulation. He had never had rheumatism or syphilis. The bowels had been costive, but the urinary functions unaffected. Sensation had been unaffected from the first.

On admission he was well-nourished, anxious in expression, paralysed on the right side; the mouth drawn to the left, the left side only of the forehead showing wrinkles, the tongue protruded to the right. The pupils equal, of moderate size, acting well to light and to accommodation. The right leg was only partially, the right arm completely powerless. Ankle clonus was marked in the right, absent in the left foot. Scapular reflex was exaggerated on the right side. There was no fibrillary tremor or alteration of sensation. The ocular muscles acted normally, and the special senses, including that of taste on both sides of the tongue, were perfect. The mind was clear. Tongue clean. Heart, lungs, and abdominal organs sound. No albumen in urine, sp. gr. 1008, and temp. 99.6°, afterwards

subnormal. In ten days he was much better, in twenty-two days the differences of reflex on the two sides were much less. On the twenty-ninth day a continuous galvanic current of twenty milliwebers, descending from the nape of the neck to the right hand was applied. By the thirty-fourth day from admission (October 4th) power was returning in the right shoulder and forearm. On the eighty-fourth day from admission, the ninety-fourth from the attack, the following excellent report was made by Dr. A. B. Carpenter, the house physician : —“The patient speaks in a slow hesitating manner, and when asked a question, only answers after a lapse of time. The right hand has moderate power of movement and muscular adaptability. It is slightly higher in temperature than the left. The tongue is protruded straight. The right leg has regained power. The deltoid muscle on the right side seems more wasted than the other muscles of that side. It and the corresponding scapular muscles act but slightly to the interrupted current, whereas the biceps and triceps react powerfully. In the forearm the flexors and pronators are more active than the extensors and supinators.”

This was the condition of things when I dictated to the patient the extract, of which the facsimile is reproduced. He afterwards brought me from his copying-press book a letter showing what his handwriting had been before the attack. This is eminently clerkly ; as will be seen in facsimile. Now here the lesion, though extensive, was entirely mechanical in its results. The muscles of the tongue and of the right arm were for a time cut off from mental control and co-ordination. The speech organs recovered of themselves to a great extent : though to the present date (May 28th, 1883) he speaks like a man who has to conquer a stammer, or who has begotten one temporarily by a large dose of undiluted alcohol. The writing-organs evidently had to be retaught. His writing is still that of a schoolboy, and improves just in the same way. It is obvious that graphic memory or recovery, is here less rapid and complete than oral. No intellectual damage or aberration seems to have occurred.

The second case, of which I only propose to comment on the graphic element, is my own ; it is sufficient to say that on

The strength of her good resolution —
was soon tested. Tom had been arranging
the house for some days in recovered health,
and that afternoon, in defiance of Miss
Somers's express commands his foot entered
Lenox's room. Old Tom said Lenox looking up in
astonishment are you well enough to be about again.
Yes you are glad to see me, ain't you glad to
see me answered Tom with a grimace. Come
I am going to cheer you up a bit. No dull
living alone. Oh no it is not Tom. I like

Dear Ned,

In answer to your favour
of this morning. I can let you
the Shop & Cottage at the Rent of
£20 (Twenty pounds) per annum
and you can have possession at
once. The Cottage brings in about
£6 per annum so that leaves
£14 only for the Shop to which
there is a good business attach-
-ed.

October 20th, after sustained mental effort, and probably some indiscretion in the use of chloral, I fell down in a partial state of insensibility, but without any hemiplegia. I managed to reach my bedroom on the second floor and to undress myself, with many falls. I have a distinct recollection of waking next morning with a total loss of power in all the spinal and cervical muscles, but with complete power and sensation in the extremities. There was at first collapse and high temperature (105°) with rambling, restlessness, and low delirium. Memory was never quite abolished; and I can easily reconstruct all the stages of my illness except the hours of unconsciousness. After three weeks of this character a second period seemed to have begun, in which delusions and delirium distinctly predominated over physical depression. These were broken, however, by lucid intervals, in which I conversed with my kind colleagues and medical attendants, and was able to form a rational, though, as my complete recovery tends to show, an erroneous diagnosis of the cause of my illness; namely, syphilis, with which I was distinctly inoculated in the performance of my hospital duties about ten years before.

The leading feature of all my aberrations seems to have been reduplication. I quadrupled or quintupled my bedroom, I doubled the number of my sisters, my nurses, and my medical attendants. I am still conscious of a mental diplopia such as occurs in sight when the co-ordination of the ocular muscles is disturbed, and in speech, under similar conditions, of those of articulation. Upon all this I am the last person to insist, from the great probability of unconscious error. But when I returned to myself enough to trust memory and senses, I found two things. Firstly, I was what I had been accustomed to call aphasic. Secondly, I could not write as I intended. The letter facsimiled in the present paper was sent, at the earliest moment possible, to the secretary of a society to which I had belonged for over twenty years, and at a meeting of which the first symptoms of cerebral overwork had declared themselves. In looking at it in the light of other cases, I marvel at the fact that it is in my power to put my thoughts to paper as I am now doing. The tendency to reduplication, which was obvious in my delusions, is as clear as need be in the handwriting. Indeed, the trick of introducing otiose letters

in familiar words lasted for some time. It is probably the trace either of a mental stammering, or, as above suggested, of

I had been poorly, and ailing
for several weeks. I went,
senseless, and delirious,
to a bed in St Thomas
hospital. After five weeks
of very curious but
dangerous symptoms, of which
even we ourselves scarcely
knew the significance, I was
able to begin my consulting-
room again.

a diplographia depending on want of synchronism or parallelism between the two hemispheres of the brain. That such a condition of the ocular muscles occurs in ordinary drunkenness is

well known; and in chorea we at times meet with a lack of co-ordination of cardiac muscle which seems to belong to the same pathological category.

The third case is that of my old friend, Mr. William Chappell, the distinguished musical antiquarian, whose permission I have for its publication. He had for many years suffered from distinct scrivener's palsy in his right hand which materially interfered with his naturally industrious literary habits. Some temporary alleviation had been produced by the use of the continuous and induced currents carefully administered by my colleague, Dr. Kilner. He had, moreover, long suffered from frequent but apparently innocuous attacks of gout, which he always treated successfully himself by the use of Laville's drops and pills; of which secret remedy he had a high opinion, and one which I am bound to say was justified by its efficacy in his case. I was also aware that there was a mitral cardiac murmur accompanying the heart's systole; though until the seizure presently to be described, I had not thought it necessary to inform him or his relations of the fact, as it had given him no inconvenience, nor were there any signs of constitutional disturbance. The following excellent report of his symptoms was sent me by his daughter, Miss Florence Chappell:—"On Sunday, September 15th, 1882, after walking home very quickly from church, he complained of not feeling well, ate no lunch, and at about 2.30 sent for me. I found he could not say what he wanted, and began sentences which he could not finish. Before the doctor came he was quite insensible, as after wandering about the room he sank into a chair almost fainting. He remained in this condition till about 4 o'clock, when he had a violent fit of convulsions; his right arm, leg, and face all working, grinding his teeth, and appearing nearly suffocating. After this he became very violent, struggling to get up, for we had got him to bed downstairs. He passed a tolerably quiet night, a hospital nurse and I sitting up with him. Next day he was delirious and restless, occasionally violent, so much so that Dr. Graham sent for a male attendant as he required a strong man to control him. He remained delirious until Wednesday (18th) in the afternoon, when he began to mend, sat up for an hour or so, seeming very weak,

16 Nov^r 1882.

Stratford Lodge,

Oaklands Park,

Marybridge Station.

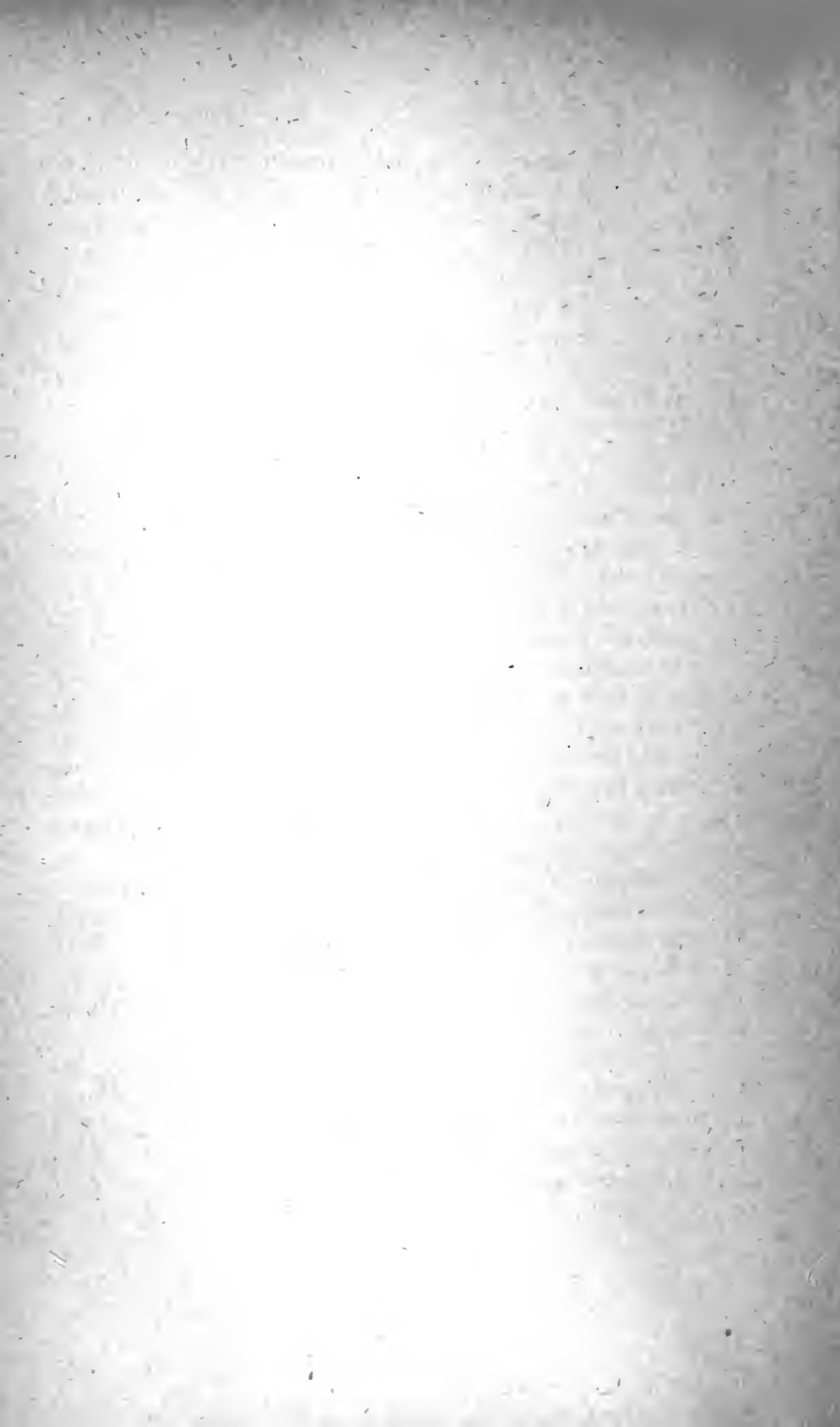
My dear Dr Stone

It does not, perhaps, often happen that your patient's first alleviation from *Scrivener's* palsy, of nine years' standing, by attacks of congestion of the brain. A fortnight ago I was about to write to you that my ~~attack~~ had been quite cured by it, but after a time it returned with diminished force, and then left me again. You commented upon the connection between the two diseases, and this seems to argue that the same part of the brain is affected in both cases.

I regret that, at the present time, it is not convenient to me to submit to the interesting operation of trepanning to prove the theory from internal evidence; although it might be an advantage to science. Still, my improved writing will argue my credibility,

having had nothing to eat or drink from Sunday's breakfast till Tuesday at 6 a.m., when he had a cup of tea. His mind became clearer, and he talked a great deal, mostly of old times. On Thursday (19th) he appeared quite well, though excitable. On Friday, calmer, walked in the garden. On Saturday still better, went for a drive, after which he was more excited for some time. Since then he has seemed wonderfully well, though his memory fails him now and then. A week before his sudden seizure he had had a slight attack of gout which he cured by taking one teaspoonful of Laville's medicine and four of his pills. He had suffered from diarrhœa for several days before the 15th." There can, I think, be little doubt that the attack was one of cerebral embolism involving the right side of the body. The mode of access, the pre-existence of known cardiac mischief, the constitutional gout, the epileptiform seizure, so well described in his daughter's notes, and the rapid recovery, all point in the same direction. He has had a somewhat similar seizure since, from which he has again recovered sufficiently to walk to my house (June 2nd). But the point which I am here anxious to insist upon is so well described in his own genial and amusing letter, dated Nov. 16th, 1882 that it needs no farther comment or explanation. This is reproduced in facsimile by the process above named. It is not necessary, in my opinion, to compare it with his handwriting during the existence of the scrivener's palsy, as the agraphia due to this cause was often complete and sufficient to require the aid of an amanuensis at other times, the "strokes" of the letters, both "upstrokes" and "downstrokes" were regularly serrated with small vibratory oscillations, of a period of about one fifth or one sixth of a long-tailed letter.

My theory as to the ætiology of this remarkable case is that the temporary and partial starvation of the writing centre from obstruction of its blood supply reduced it from spasmodic and over-excited action to very nearly its normal state; and that, in fact, the two morbid conditions neutralised one another by opposite action.



THE THROAT DEPARTMENT OF ST. THOMAS'S HOSPITAL IN 1882.

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THE following report is intended to embrace remarks on points of interest, illustrating etiology, pathology, symptoms, diagnosis, prognosis, and treatment of some of the affections which came under observation in the Throat Department of St. Thomas's Hospital in 1882, to communicate in greater or lesser detail a few specially interesting cases, and to terminate with short tabular statistics of the whole material of the department. I need hardly say that it is not my intention to discuss methodically every affection observed, or even *all* the features of those diseases, which are mentioned in the following paragraphs. That would amount to writing a textbook on throat diseases and be quite alien to the purpose of the present paper. I conceive it to be the object of an annual report, that those points only should be made subjects of discussion in which the experience of the year has added to, or modified, former experiences of the reporter. I wish the following remarks to be looked upon from this point of view.

1. *Acute Œdematous Uvulitis.*

A curious case of acute œdematous uvulitis was observed in a man, æt. 34. Without any assignable cause and without

pain the uvula had attained within twenty-four hours the length and dimensions of a good-sized thumb, so that the patient could easily take it between his incisor teeth. It was bright red and semitransparent, whilst the other structures of the throat were not changed in appearance. Energetic scarification was followed by rapid return to normal conditions.

2. On the Curability of Chronic Granular Pharyngitis.

My experiences of this affection during the last year at St. Thomas's Hospital have further corroborated my opinions with regard to the curability of this, if trivial, yet frequently most troublesome condition. *The prognosis as to a lasting cure depends upon the etiology of the affection in every individual case.* If the cause be local, *i.e.* if the chronic inflammation be due to excessive smoking, working in a dusty, impure, unduly hot atmosphere, to professional abuse of voice, &c., the chances are very good, provided, of course, that the causes which have brought about the affection are in future properly avoided, and that if the pharyngeal affection depend upon other local causes, such as enlarged tonsils or adenoid vegetations in the vault of the pharynx, these have been got rid of before the treatment of the pharyngitis be undertaken. If the affection be a local symptom of either general plethora or, just the reverse, of general anæmia (this especially in chlorotic, amenorrhœic, or dysmenorrhœic girls), the prospects are still on the whole favorable, provided that the general health be at the same time appropriately attended to, and the general treatment continued, or from time to time resumed, long after the local affection has been got rid of. If, on the other hand, the affection begins to make itself felt in women at the climacteric period, it is generally a source of long lasting trouble to both patient and attendant. The manifold, perverse, and exaggerated sensations, *e.g.* pain in the throat, confined or not to certain spots; feeling of constriction or choking; heat, dryness, sensation of foreign bodies; dysphagia, &c., are quite out of proportion to the insignificance of the anatomical changes. The granulations, even if destroyed by that excellent caustic the galvano-cautery, which is of so great service in

all other forms of the affection, reappear with surprising rapidity, and unless the destruction of them, which is even in these cases almost without exception followed by great temporary relief, be several times repeated within the course of a few months, we are practically restricted to nervine sedatives and consoling words as the only available therapeutic measures. Apparently, however, as soon as the other troubles dependent upon the change of life disappear, the same takes place with the pharyngeal paræsthesia and hyperæsthesia. For I do not remember having had a single female patient over fifty-seven complaining of the above symptoms, either at St. Thomas's, or in private practice; whilst the great contingent of these real sufferers is furnished by women aged from forty-two to fifty-five.

3. Herpes of the Pharynx.

Four cases of this rare affection, which I do not remember ever having seen before, came under observation. Two occurred in males, two in females. One of the male patients was a labourer, æt. 21, the other a schoolboy, æt. 7; the two females were 41 and 23 years of age respectively. All the cases occurred in the autumn months (from September to November). In none of the cases could a special cause, except catching cold, be assigned for the outbreak of the herpetic eruption. In the case of the boy there was besides a palatinal and tonsillar outbreak of vesicles, well developed herpes of the upper lip; in the case of the elder woman there was considerable swelling of the face. In all four cases the disease began with shiverings and feverish symptoms. In none of them was the affection of a very severe type, but in all four cases the vesicles, at first almost transparent, later on whitish, were surrounded by an area of congested and thickened mucous membrane, so characteristic as to leave no doubt of the diagnosis. In the case of the elder man the eruption appeared in successive crops, *i.e.* after the first vesicles had become confluent, burst, and changed into several small ulcers, a number of fresh vesicles appeared on other parts of the palate, before the ulcers resulting from the breakdown of the first crop had healed; and this process was

several times repeated. There was at no time, however, any formation of false membranes. The duration of the disease in this case was over three weeks; in the other three cases from one week to a fortnight. In all four cases the hard and soft palate were the parts most affected; only in the case of the boy could distinct vesicles be seen on the right tonsil. The treatment consisted in the administration of sulphate of quinine and of a chlorate of potash gargle.

4. The Indications for Uvulotomy.

Several patients attended for the special purpose of asking whether amputation of the uvula, which had been proposed to them, was indispensable, or at least likely to be useful in their cases. I am bound to say that in none of these was I able to detect any indication, however slight, which in my opinion could have justified that operation. In some of them granular pharyngitis was evidently the cause of their complaints; in one or two there was paræsthesia or hyperæsthesia dependent upon local or general anæmia; in the remaining cases the pharynx was not the seat of disease at all. I take this opportunity—which I have in fact long sought for—to protest strongly against the abuse of uvulotomy, which is to my positive knowledge but too frequently indulged in in this country. It is apparently believed in some quarters that cutting the uvula is a sort of “panacea” for all possible forms of throat disease, whilst in others it is looked upon as a “last resort” after the failure of all other measures. This statement is not exaggerated. At this moment a patient attends the Throat Department who suffers from complete paralysis of the left recurrent laryngeal nerve, and whose other symptoms warrant a strong suspicion of aneurism. He had his *uvula* cut, for the benefit of his dysphonia before he applied to the hospital! This is not the only case of the sort in my experience. Nor do I argue from the cases in which patients have come to me and declared that the removal of the uvula, which had been effected had not been followed by the slightest benefit. It would be manifestly unfair to judge from such reports, for there might have been in spite of their statements sufficient reason for per-

forming the operation. But it is certainly permissible, on the other hand, to form an opinion as to the abuse of the operation from such cases as those mentioned at the beginning of this paragraph *i.e.* from cases in which patients either come to ask whether the operation, which had been recommended to them elsewhere, was necessary, or in which they were directly sent by other practitioners in order to have the operation performed. From other cases too in which a small, often—if anything—almost *atrophic* uvula is accused of being the cause of all sorts of troubles, whilst the real sources of discomfort remain altogether neglected and untreated, I have come to the firm conviction that the operation is very often quite unnecessarily performed in this country. And I may be permitted here to utter a word of warning against the opinion, which I have frequently met with, *viz.* that the operation, even if not productive of any decided improvement, is after all such a very small thing that it does not much matter, even if it is useless. That is no doubt true, so far as the operation itself and the absence of lasting damage after its performance are concerned. On the other hand, the *after-pain* is often quite out of proportion to the smallness of the operation, and this pain, accompanied by dysphagia and considerable febrile disturbance, not rarely lasts from two to five days. On recollecting what I have seen myself, and what I have been told by intelligent persons who have had that operation performed without any improvement resulting from it, I feel sure that patients, especially if not benefited, are likely to take a very different view from that quoted above as to whether the operation is a mere nothing, and that their confidence in their medical adviser cannot be increased by their having to suffer acutely for several days without the slightest improvement in the original symptoms!

In my opinion the operation is *very rarely* required. On referring to my case-books I find that in private practice I have performed it within the last seven years nine times altogether. It might perhaps occasionally prove useful in cases of professional singers suffering from loss of tone without appreciable laryngeal affection, and presenting an elongated, thickened, and relaxed uvula; although I must confess that I have not been able to bring myself to believe in the great influence of the

uvula on the voice which is ascribed to it by some authors, and I cannot help thinking that this influence is often over-rated. But apart from this, I know of four positive indications only urgently calling for the operation: 1. Elongation to such a degree that the uvula, especially during sleep, is sucked into the larynx and produces attacks of suffocation. 2. The co-existence of a long, thick uvula, with a persistent feeling of irritation in the throat and a constant tickling cough; *but it must be distinctly understood that this indication is valid only after careful examination of the pharynx, larynx, and thorax, and after exclusion of all other possible causes.* 3. The hindrance offered by a very long uvula to the performance of delicate endolaryngeal operations. 4. Malignant disease starting from the uvula. The first of these indications is excessively rare, but no doubt exists. I have seen it once in an old gentleman belonging to our own profession, in whose case the occurrence of nocturnal attacks of suffocation could not be attributed to any other cause than the aspiration into the larynx of an excessively long, thickened, and relaxed uvula. This view had also been taken by Sir James Paget, who had kindly told the patient to consult me. In this case I felt justified in strongly advising ablation of the uvula, but the patient hesitated, and I do not know whether he had the operation performed. The second indication is no doubt more frequently present, but still it is, I doubt not, on the whole decidedly rare. The uvula should in cases of persistent irritation and constant tickling cough certainly not be removed before the treatment of other changes to which these symptoms could reasonably be attributed, especially of granular pharyngitis, has been thoroughly carried out and yet not improved the patient's condition! It is just in such cases as the following that rashly removing the uvula brings blame upon the practitioner: The patient complains of persistent hacking cough. The chest is examined, nothing is found; a long uvula is detected. No notice is taken of the simultaneously present granular pharyngitis. The uvula is removed; the operation is in some cases simply useless, in others not only useless, but also followed by considerable pain, and the patient seeks other medical aid, and complains bitterly of his previous medical adviser. On the other hand, no doubt, in cases judiciously selected and

suitable for the operation, the result is most gratifying, the troublesome symptoms disappearing as if by magic immediately after the removal. But, I repeat, these cases are decidedly rare.

I have stated above that there exist two other, though certainly excessively rare, indications for removal of the uvula. The first of these would arise, if a very long but otherwise not troublesome uvula interfered with the performance of a delicate endolaryngeal operation (removal of growths, &c). I have not yet met with such a case, but can fully conceive the necessity of amputating the uvula under such circumstances. The last indication, malignant disease originating from the uvula, is certainly still rarer, but has sometimes to be thought of. A few weeks ago Dr. Wilberforce Smith sent me a lady, æt. 55, who three months previously had remarked an outgrowth on her uvula. The neoplasm growing rapidly it was removed by cauterisation with nitrate of silver. Shortly afterwards, however—*i.e.* a fortnight before I saw the patient—it reappeared, and there was now occasional pain in the left side of the neck (?) On the left side of the uvula there was a cauliflower-like, white, apparently non-pedunculated, outgrowth of the size of a small bean, sharply contrasting with the dusky and somewhat swollen uvula. Although there was no swelling of lymphatic glands on either side of the neck, and although the primary occurrence of malignant growth on the uvula is practically unknown, yet there is no reason why this part should not be occasionally the starting point of malignant disease, and considering the rapid growth and the reappearance of the neoplasm, the age of the lady, and the pains complained of in the left side of the neck, I felt justified in removing not only the growth but the greater part of the uvula with it, effecting the amputation in the healthy part at some distance from the highest point of insertion of the growth. Microscopic examination fortunately showed that the neoplasm was only a true papilloma, but under similar circumstances I should certainly follow the same plan as that adopted in this case.

5. Salicylate of Soda in Acute Tonsillitis.

Although quite satisfied with the results of the administration of guajac in the form of lozenges (Troch. Guajac, Throat Hosp. Pharmac.) in recent cases of acute tonsillitis, I was induced by the favorable reports of the effects of the salicylates in this affection, to try salicylate of soda in large doses in a number of cases of acute tonsillitis, especially in those in which the tonsillar affection was ushered in by general rheumatoid symptoms. I am unable to report any marked influence exercised by the drug upon the local process in the tonsils in any of these cases.

6. A Case of Gangrenous (?) Tonsillitis.

W. L—, æt. 30, glass-blower, applied to the Throat Department on November the 10th, complaining of foetid breath, which he said he had observed for the previous week, during which his child died from diphtheria and his wife had a sore-throat. Moreover there was great general prostration.

On examination the first thing noticeable was a horrible and characteristically gangrenous odour emanating from the patient's mouth, and very perceptible at a distance of several feet. Both tonsils were much enlarged and congested. In the uppermost part of the left, mostly covered by the anterior palatinal arch, an irregular, bluish, dark, sphacelated patch was seen, from which evidently the pestilential smell proceeded. The mass showing a tendency to sloughing, was grasped with forceps, removed, and the base strongly cauterised with solid nitrate of silver. Internally bark and iron were given, and an antiseptic gargle ordered. The patient when seen four days later was convalescent, and was dismissed cured on the 21st of the same month, no further mortification of tissues having taken place.

It might of course be argued, especially with regard to the history, that this was not a case of gangrene but of diphtheria, the last stage of which only came under observation. I cannot absolutely prove that this was not so, but the following

two points seem to be rather in favour of the gangrenous nature of the affection: (1) there was absolutely no engorgement of the cervical or submaxillary glands, which so frequently accompanies pharyngeal diphtheria; (2) the patient, frightened by his child's severe illness and naturally thinking that he had caught the same disease, looked down his own throat as soon as he observed his breath becoming fœtid. He stated positively that the breath was already horribly offensive *when as yet nothing was to be seen*, and that the bluish, dark patch on the left tonsil, which he had himself noticed, had only made its appearance on the previous day. I have no reason to doubt the patient's statement, which, coupled with the absence of glandular swelling, point to the gangrenous nature of the affection. Moreover, I must say, that I have never seen a similar, almost black, discoloration, nor smelt an odour to be compared with the one present in this case, in diphtheria. In conclusion, I have to state that during the whole illness apparently no febrile symptoms had ever manifested themselves, and that the patient's pulse on his first visit was extremely small, slow, and slightly irregular.

7. *A Case of Hæmorrhage after Tonsillotomy.*

In eighteen out of the fifty-five cases of chronic tonsillitis and of hypertrophy of tonsils which came under observation, one or both tonsils were removed by cutting operations. The remaining cases were treated either by application of the galvano-cautery¹ or by internal medication. The instrument used in all the eighteen cases, in which a cutting operation was performed, was Mackenzie's tonsillotome. In seventeen of the cases everything went well; in one, however, for the first time in an experience of several hundred cases of tonsillotomy, I met with serious arterial hæmorrhage. This occurred in a man, æt. 46, who came to the Throat Department complaining of almost uninterrupted attacks of sorethroat and quinsy, thick

¹ I leave it to a future report to develop more fully the principles which guide me in the selection of the *form* of operation in cases of chronic obstruction of the upper air passages, *i. e.* in cases of hypertrophy of tonsils, adenoid vegetations in the vault of the pharynx, and nasal polypi.

nasal voice, and attacks of choking during sleep. His tonsils were enormously enlarged, and presented a honey-combed appearance. I performed tonsillotomy in the ordinary manner, and had to use the largest tonsillotome on account of the excessive size of the glands. The operation did not offer the slightest difficulty, and the patient, after the removal of the tonsils, was, as usual, directed to gargle his throat with cold water in the same room, and to return for inspection when the little hæmorrhage, always following the operation, had ceased. In the meantime I saw some other patients, and my attention was only roused when, after the lapse of about fifteen to twenty minutes, I happened to glance at the patient, and saw him still gargling and spitting uninterruptedly. On being asked whether the bleeding had not yet stopped, he replied that it never had ceased for a moment, and that in fact it seemed to increase more and more as time proceeded. He further stated, that he felt rather faint. Examination was rather difficult, the mouth being constantly filled with bright-red blood. No spurting artery could be detected, but finally I saw that the blood welled up rythmically from the recess between the palatal arches on the left side. Sucking ice, and sipping lotions of alum and tannic acid, were quite without avail; the local application of perchloride of iron to the neighbourhood of the bleeding spot made matters only worse, clotting, as it did, the large quantity of blood contained in the patient's mouth, failing to control the hæmorrhage, and concealing from view the exact locality of its source. Finally, the hæmorrhage was stopped by direct digital pressure applied to the bleeding point, but only after the patient had lost a very considerable quantity of blood, and was much blanched. He was kept in the hospital for a week, and no return of the hæmorrhage took place.—What the exact *fons et origo* of the hæmorrhage was I do not venture to say positively. Certainly it was arterial. I do not believe that the ascending pharyngeal artery was injured, the bleeding, though very persistent, being at no time so copious as to justify the belief that a comparatively large artery had been cut. I am pretty sure that the small artery running in the faucial pillar, the lesion of which according to Lefferts, is one of the most common sources of hæmorrhage after tonsillotomy, had not been injured, for I remember distinctly, that

the tonsil was quite free from coalescence with the pillar. The most probable explanation appears to me to be that the hæmorrhage was due to a lesion of a branch of the tonsillar artery.

However this may be, the case convinced me that arterial hæmorrhage after tonsillotomy, which I confess I had after a very long period of uninterrupted success in my own practice almost come to look upon as always due to some fault on the part of the operator, is an event which, even if the tonsillotome be used and all usual precautions duly observed, is not beyond the sphere of possibility. For this reason, I considered it my duty to communicate the case, and I would add, that under no circumstances would I, if the same accident happened to me again, proceed to local application of perchloride of iron, but if sucking of ice and sipping of alum solutions, &c., failed, I would at once have recourse to direct digital pressure.

8. *A Case of Carcinoma of the Left Tonsil spreading downwards to the Larynx; Gastrostomy; Tracheotomy. Death.*

W. H—, æt. 65, bricklayer, presented himself on July 11th, his complaint being dysphagia and pain in the left side of the neck, radiating from the neighbourhood of the angle of the jaw into the face, the left ear, the occiput, the shoulder and left arm, and in front into the thorax. He had begun to suffer about nine months previously with what he called “ulcerated sorethroat,” the pain had gradually extended downwards, and the difficulty of swallowing constantly increased. Mastication was very painful and difficult. He had lost flesh, and the pain in the throat, especially at night, had of late been often almost intolerable. There was no dyspnœa, and the voice, though thick, did not indicate laryngeal mischief.

Examination was difficult on account of his inability to open his mouth widely. The breath was very foetid. The left tonsil and its neighbourhood were changed into an ulcerating swollen mass, which, surrounded by an angry looking area, occupied almost the whole of the left lower half of the pharynx and the posterior left half of the root of the tongue, and spreading downwards to the epiglottis and the left hyoid fossa, and

through this to the side of the larynx, just dipped over the left aryepiglottic ligament, and had begun to involve the larynx itself. The left side of the epiglottis was thickened and superficially ulcerated, the right half was in a state of œdematous infiltration. The left ventricular band was greatly swollen and congested, the vocal cords were free. All the parts were constantly covered with a frothy phlegm, which greatly inconvenienced the patient. The whole left half of the neck underneath the angle of the jaw was occupied by a cluster of greatly swollen and hard lymphatic glands, which were very tender on pressure. The posterior cervical lymphatics were swollen on both sides, more so on the left. There was neither any history nor any indication of syphilis.

The patient was admitted an in-patient under Mr. Mason on July the 14th. The history of the next two months was one of gradually increasing dysphagia. On October the 4th Mr. Mason performed the first step of gastrostomy. A description of the operation will be found under the heading "A Case of Gastrostomy," in the 'Lancet' of October the 14th, 1882. The patient did fairly well until the second day, when symptoms of dyspnœa made their appearance. On the third day they became so urgent that tracheotomy was performed. The patient, however, died two or three hours after, apparently from exhaustion. The following are the notes from the post-mortem report by Dr. Hadden concerning the appearances of the parts occupied by the new growth: "The left tonsil is enlarged, firm, white on section; its surface and the adjacent part of the soft palate show dirty, irregular ulceration, and some thickening. Ulceration and thickening extend down as far as the left vocal cord. The epiglottis is decidedly thickened and ulcerated." Diagnosis: Malignant disease of left tonsil and larynx. Nothing is stated concerning the histological features of the new growth. I was abroad at the time of the patient's death, and am therefore unable to say what was the exact nature of the dyspnœa necessitating tracheotomy, but should be inclined to think, both from the previous appearance of the larynx and from experience of other cases, that acute œdema in the neighbourhood of the new growth had supervened.

9. *Benign Neoplasm of the Pharynx.*

This was a case of a small fibroid growth on the left anterior pillar of the fauces of a woman æt. 34, which produced a troublesome sensation of a foreign body in the throat. It was removed with scissors and microscopically proved to consist of bundles of wavy fibres poorly supplied with vessels, to be covered with squamous epithelium, and not to show any trace of cells.

10. *Foreign Bodies in the Pharynx.*

In two of the three cases that came under observation, fish-bones were detected—in one case within, in the other behind, the tonsil—and removed. In the third case there was a history of a piece of bone having been swallowed and having stuck for several days in a position, which was accurately described on the side of the pharynx at the height of the soft palate, but nothing could be detected. The patient got well under bromide of potassium.

11. *Isolated Anæmia of the Larynx; a valuable diagnostic sign in the earliest stages of Phthisis.*

My observations during the last year concerning the significance of *isolated* laryngeal anæmia have further corroborated my conviction of the high diagnostic value of this symptom in very early stages of pulmonary phthisis. It will be understood, of course, that I only speak of *isolated* laryngeal anæmia, not of cases in which the pallor of that part accompanies general anæmia of the external integument, or of other mucous membranes. But, if occurring as a purely local phenomenon, it is nearly, though not absolutely, pathognomonic. Repeatedly was I enabled to foretell, from mere laryngoscopic inspection, without addressing a single question to the patient, and judging only from the pallor of the epiglottis, ventricular bands, and mucous membrane over the arytenoid cartilages, that we had to do with a case of phthisis, when both the history of the case

and the result of the physical examination of the chest, justified my prediction. But even in those cases in which no signs of phthisis can as yet be detected in the lungs, the observation of this isolated laryngeal anæmia is, in my opinion, of the highest value; for I have repeatedly had the opportunity in private practice of convincing myself *that this isolated anæmia of the larynx in a number of cases plays the rôle of a warning precursor of pulmonary phthisis*, being present at a time when most careful examination fails to detect any signs of mischief in the chest. Repeatedly have I had the melancholy satisfaction of seeing my diagnosis of threatening pulmonary phthisis justified by the subsequent course of events, though at the time, when I mentioned that serious probability, basing my opinion upon the laryngeal anæmia alone, I was pronounced an alarmist by high authorities. However, I do not wish to overstate the significance of this sign. I should be sorry absolutely to condemn anyone on the strength of this one phenomenon by making the positive diagnosis of impending pulmonary phthisis. What I wish to imply is simply that the *detection of isolated laryngeal anæmia* (in cases, *e.g.* in which nothing but a feeling of irritation in the throat or similar trivial symptoms are complained of) *ought, under all circumstances, to induce the physician to carefully examine the lungs, and to remain apprehensive, lest pulmonary phthisis may be on the eve of development, even if at the time the result of his examination should be negative.* Why this isolated anæmia of the larynx should occur at so early a stage, apparently independent of structural changes and unaccompanied by analagous disturbances in neighbouring parts, has not yet been satisfactorily explained, and I will not indulge in theoretical speculations as to its cause.—There is one point in the diagnosis of the phenomenon which wants special attention. I refer to the necessity of devoting the first glance into the laryngeal mirror to the ascertainment of the *colour* of the parts. Changes in structure and in mobility are permanent features, and may be safely postponed to a later stage of the examination; the coloration of the parts, on the other hand, especially in these cases of early phthisis, is exceedingly unstable. So quick, indeed, are the vaso-motor changes in these cases, that if in a laryngoscopic course the same case be examined by a series of students in turn, the first will see the characteristic

anæmia, the second probably a normally coloured larynx, the third and the following ones congestion instead of anæmia. The necessity of always beginning laryngoscopic examination with an investigation of the colour of the parts, is therefore obvious.

12. *Local Treatment in Chronic Laryngitis.*

On a previous occasion ('British Medical Journal,' 1880, vol. i, p. 121) I have submitted to the profession my views on the treatment of chronic laryngitis. I have had no occasion to modify these views in any important respect since then, and I mention the point here only because I wish to state that in these cases in which daily local applications to the affected organ were deemed necessary, they were made with great assiduity by my clinical clerks. I feel sure that the good results obtained by them, even in very old and much-developed cases, will induce them in their future career to avail themselves at once of so satisfactory and, after all, simple method of treatment in preference to first trying all sorts of theoretical and ineffective medication. I think a conviction that local treatment in these cases is indispensable is gradually gaining ground amongst the profession.

13. *A Case of Fibroma (?) and one of Papilloma of the Larynx, the latter possibly in the stage of transformation into Epithelioma.*

Strictly speaking but *one* case of benign neoplasm came under observation, for the other one quoted in the tables as benign, is at least doubtful.

The first case occurred in a woman, æt. 47, and was one of an apparently pedunculated, pretty large, smooth growth (fibroid?), originating from below the anterior commissure of the vocal cords, being just visible below the anterior part of the glottis during quiet respiration. When the patient expired violently before intonating, the growth was blown up over the level of the glottis, and appeared as a nearly globular mass, resting on the anterior third of the vocal cords. The voice was very

variable; sometimes quite normal, viz. when the patient spoke quietly, sometimes quite aphonic, viz. when the attempt at speaking was preceded by a strong expiratory movement, or when she spoke excitedly. This, of course, depended upon whether the growth remained below the glottis or whether it was thrown above it, and rested on the vocal cords, preventing their free vibrations. Attempts were made at accustoming the patient to the introduction of instruments into the larynx, but were continued over a short time only. The patient was in the climacteric period, and suffered greatly from the effects of the change of life. She had repeated epileptiform convulsions, was reported to have attempted suicide on several occasions, and altogether at the time proved so very unsuitable a subject for endo-laryngeal operation, that but little hope could be held out to her of speedy success. She then gave up attending, and I have not since heard of her. The growth produced no respiratory difficulties, and extra-laryngeal interference did not appear justified.

The second case was a rather remarkable one. W. T. B—, æt. 46, gardener, was sent to my house on March 15th, 1882, by Dr. George Johnson, with the following history. He had been hoarse for the last twenty years. About six years after the commencement of the impairment of his voice, difficulty of breathing had manifested itself; he had become an inmate of the Hospital for Diseases of the Throat, and Dr. Morell Mackenzie had removed a number of "warty growths." The difficulty of respiration had then disappeared, but he had never got rid of his hoarseness. During the next thirteen years he had enjoyed good health. (From his medical adviser, Mr. Macnamara, of Uxbridge, I heard later on that he had contracted syphilis about 1874, and had had a secondary skin eruption.) About eight to ten months ago, without any cause known to him, difficulty of breathing reappeared, and again as in 1868, very quickly increased in intensity.

Present state.—Patient is a prematurely old-looking, slender man, with sallow complexion and expression of suffering on his face. He does not, however, complain of any pain, and positively denies, on being asked, that he ever suffers from pain in the throat or ears. His only complaint is difficulty of breathing. Voice very hoarse, but not quite aphonic. Larynx much con-

gested. Both ventricular bands greatly swollen. The right vocal cord covered along its entire length with small cauliflower-like, angry-looking, reddish excrescences, which so completely envelop it that nothing of its proper structure is to be seen. The left vocal cord has apparently undergone a similar change, but the swelling of the left ventricular band is so considerable that only the internal border of the cord is visible. This is certainly affected similarly to the corresponding part of the right cord. The glottis is very greatly narrowed by the excrescences, and in fact reduced to so small a slit that the patient's dyspnœa is easily explained.

There were two points in the patient's history and state calculated at once to draw attention to the possibility that the growths seen with the laryngoscope were not merely harmless, benign papillomata, viz. (1) the history of the reappearance of the dyspnœa after a period of freedom extending over fourteen years, and this at an age at which one has naturally to fear the development of malignant disease, and (2) the peculiarly angry look of the growths, which made them certainly unlike the numerous papillomatous growths which I had so far seen. I could not, however, detect any other signs corroborating my suspicion: there was, as I have stated, no pain either in throat or ears; there was no dysphagia, no augmented secretion of saliva, no enlargement of lymphatic glands, no history of cancer in the family, &c. Yet in spite of the absence of all these corroborative signs, I could not help suspecting that the growths were not innocent papillomata, and before proceeding to any operation I wrote to Dr. Johnson and Mr. Macnamara that I was afraid the disease had taken a malignant turn. As, however, it was obvious that something had to be done for the relief of the patient's dyspnœa, I directed him to attend as an out-patient at St. Thomas's, and I removed—whilst at the same time an anti-syphilitic treatment was instituted—within the next few weeks repeatedly larger and smaller fragments of growth with cutting forceps from both vocal cords, until the supraglottic space was entirely cleared. My colleague, Mr. Stewart, was kind enough to examine the pieces under the microscope immediately after removal. *On no occasion was the slightest trace of cancerous degeneration found*, the report being always that the growth was of a simple villous structure,

richly supplied with blood-vessels, and covered with squamous epithelium. The larynx, however—though all this seemed further to disprove my suspicion—continued to look so inflamed, and there was such extraordinarily rapid reproduction of the growth, that after a short time (I operated ten times altogether) I could not bring myself to continue my endo-laryngeal operations, and requested Sir William MacCormac to perform tracheotomy. This operation, which was performed on June the 12th, was followed not only by complete restoration of the freedom of breathing, but also by considerable improvement in the general state of health and appearance of the patient. He left the hospital on the 1st of July.

On the 30th of September he presented himself again at my house, wearing, of course, his tube. He stated that he felt very well and comfortable, but on laryngoscopic examination I found that the laryngeal growth had become much more developed, and now involved in addition both ventricular bands. Behind the belly of the right sterno-cleido-mastoid muscle *a considerable cluster of enlarged and hard lymphatic glands were felt*. They were, however, neither spontaneously painful nor tender on pressure.

Since then I have not seen the patient until to-day (May 7th, 1883), when at my request he came to see me. The only change noticeable since the 30th of September, 1882, is a further extension of the growths both above and below the glottis. There is, however, no trace of ulceration going on. The glandular swelling behind the right sterno-cleido-mastoid muscle is, if anything, a little smaller, certainly not larger, neither tender nor painful. The patient has no complaint to make, and is quite happy and satisfied: he continues to wear his tube.

Now, what is the character of the growth in this case? I do not venture to give a positive reply to this question. It is quite possible that it has been all the time, and continues to be, a simple benign papillomatous neoplasm; it is equally possible that it is slowly undergoing a malignant metamorphosis. The point of greatest interest is certainly the question of treatment in such cases. Repeatedly of late fears have been expressed lest innocent papillomata may be converted into epitheliomata by protracted endo-laryngeal attempts at re-

moval. Whenever an opportunity has offered itself to me I have used it to protest against this dangerous and incorrect suggestion, and I repeat the protest on this occasion. I hold that *if there be a tendency to malignant degeneration of originally benign growths, this degeneration will take place with or without operation*, whilst experience is the best proof that even very protracted endo-laryngeal manipulation is not productive of the slightest harm if there be no such tendency.¹ It will, of course, be the touchstone of the operator's sound judgment *not to operate in unsuitable cases*, or to *continue* his manipulations in *doubtful* cases like the present, if there be good reason for fearing that continued local irritation might be instrumental in hastening, if not in bringing about, the dreaded transition into malignant growth. I have lately read some reports of cases in point in which I confess I did not understand from the observers' own descriptions how endo-laryngeal operations could ever have been thought of; still less how they could have been persisted in, after the malignant nature of the neoplasms had more and more plainly declared itself. For such proceedings I have no sympathy and no excuse. But suppose that I had found to-day that epithelioma had positively declared itself in my patient's case, I would indignantly refute an insinuation that the endo-laryngeal operations performed last spring had been the *cause* of this unfortunate turn, and would honestly and positively believe that the transformation had begun before the patient ever saw me. The case teaches, I think, some important lessons.

14. *Two Cases of Endo-laryngeal and one of Epiglottidean Carcinoma.*

CASE 1.—A. T—, æt. 60, formerly a solicitor, an in-patient of Dr. Bristowe's, was first examined by me in July, 1881, at Dr. Bristowe's wish, his symptoms at that time differing remarkably from those usually present in laryngeal carcinoma. Having enjoyed good health up to November, 1880, he began to suffer at that time from shortness of breath, which quickly increased. This was his only complaint. There was no pain

¹ For further details see 'London Medical Record,' 1878, p. 491.

whatever, and his voice for a long time remained quite natural. So remarkable indeed was the combination of very considerable inspiratory dyspnœa with complete preservation of voice and absence of all other symptoms, that a suspicion of bilateral paralysis of the abductors of the vocal cords was entertained. When I saw the patient in July, 1881, my notes say that there was displacement of the larynx towards the left; that the right ventricular band and vocal cord were changed into a red, partially ulcerated tumour, which extended to the median line; and that the left half of the larynx was free. Externally, on the left side of the neck, just underneath the chin, a considerably enlarged lymphatic gland was found. The diagnosis of carcinoma of the larynx, which I felt justified in making from these appearances, was endorsed on August the 4th, 1881, by my friend Dr. B. Fraenkel, of Berlin, who was then here for the International Congress, and who saw the patient with me on that day. I recommended tracheotomy, which was performed on August the 27th, 1881, and which, rendering respiration easy, was followed by considerable improvement in the patient's general state of health. He was dismissed from the hospital early in September, but returned in the beginning of November on account of commencing dysphagia. He was again sent to me on November 11th, when the following changes were noted: "Considerable progress of the laryngeal disease; the tumour of the right half of the larynx now nearly fills up the whole field of vision; there is a second small tumour in the inter-arytenoid fold; epiglottis still free; the enlarged lymphatic gland on the left side of the neck still larger than it was in July. No other secondary deposits." Two days after this examination I was informed by Dr. Coxwell, who was then Dr. Bristowe's house physician, that considerable hæmorrhage from the larynx had taken place, which was, however, stopped by application of ice. The patient was again dismissed at his own wish a few days later, being advised to come up for periodical examination every three to four weeks. The last time I saw him was in February, 1882, in the throat department. He did not feel much worse, and had had no return of the hæmorrhage, but the dysphagia had got more troublesome. The larynx was found completely blocked up by the new growth, to an extent in fact that I have never seen before or since. It was

impossible to discern any of the normal parts contributing to its configuration, except the epiglottis, which was still free. On external examination the larynx was found to be distinctly broadened, the alæ of the thyroid cartilage being no doubt pressed outwards by the new growth. No other change was noted. To my regret the patient has not come to me since, and I do not know what has become of him. A remarkable fact was, that throughout the time he was under observation he preserved his unusually florid complexion. His appearance, indeed, was as unlike as it could possibly be, the marked peculiarities of laryngeal cancer cases in general.

CASE 2 (?).—Th. M—, æt. 68, labourer, applied to the throat department on October 10th complaining of difficulty of breathing, difficulty of swallowing, pain in the throat shooting to the ears, and loss of flesh. All this was stated to have commenced only six weeks previously in consequence of a cold. His main complaint was dysphagia, which he stated got worse every day. There was no history of syphilis.

On examination no glandular enlargement about the neck was discovered. Pressure upon the larynx from without was slightly painful. The breath was not offensive. The mouth and throat were constantly filled with a frothy phlegm. Voice slightly hoarse. All the structures from the base of the tongue downwards, as far as they were open to inspection, seemed swollen and congested. The epiglottis was considerably thickened and ulcerated, especially its free border. In the inter-arytenoid fold a number of nodular projections, partly in a state of ulceration, were seen. An ulcerated swelling extended from thence along the left ary-epiglottic fold and joined the epiglottidean ulceration.

Iodide of potassium in large doses did not produce any improvement whilst the patient was under observation. But he disappeared after having attended a very few times only. The diagnosis in this case is, of course, not entirely beyond doubt, but I believe, considering his age, his complaints, the visible changes and the inefficiency of the antispecific treatment, that the case was almost certainly one of laryngeal carcinoma.

CASE 3. *Epithelioma of the Epiglottis*.—T. W—, æt. 82, a former valet, applied to the throat-department on January 26th, for great difficulty of swallowing and pain in the throat. His previous history was remarkably good. Present illness began about six months ago with pains all over him and difficulty of swallowing. Three months later he noticed a swelling on the right side of his neck, which had gradually been getting larger and had been very painful. The pain was sharp and worse at night. During the last two months he had been losing a great deal of flesh and had had shortness of breath. At present he is unable to take any solid food on account of the severe pain it gives him to do so. He has had a cough more or less during the last six months, but with hardly any expectoration, till the last six weeks, during which he has been spitting up a large quantity of frothy and slightly dark-coloured phlegm. The phlegm is not offensive. His voice has been getting hoarse (?) during the last month. He has never been sick or spat up any blood.

Present state.—General emaciation. There is a lump on the right side of the neck, extending from ear to sternum, nearly the size and shape of half a cocoa nut. The skin over it is red and adherent, and in one place there is a depressed cicatrix. The tumour is very hard and tense, painful and tender. It extends beyond the middle line, pushing the larynx and hyoid bone to the left, and almost fixing the former.

On examination of the throat the right tonsil and its neighbourhood are seen to be pushed inward. Soft palate and uvula are freely moveable. With the laryngoscope it is seen that the epiglottis is changed into a large, red, nodular ulcerated tumour. The ulceration is extending to the back of the tongue in front, and to the right hyoid fossa and side of the pharynx laterally. The interior of the larynx is free.

Lungs emphysematous. Nothing abnormal in other organs.

The patient was admitted on February 14th into George Ward under Dr. Ord. During the next week he got gradually weaker, but no particular change was observed until the 21st, when the following notes were made:—"Voice hoarser to-day. Complains of great pain over the tumour, which keeps him awake at night." At 4 p.m.: "He was asleep, when his breathing became stertorous and difficult, and after a while he

awoke in a paroxysm of dyspnœa. He partially rallied from this, but at 7.30 p.m. he again became rather worse, and tracheotomy was performed under chloroform. During the operation the pulse and respiration entirely stopped, but after insertion of the tube artificial respiration was resorted to and animation was soon restored." The patient, however, never rallied, and died at 4.15 a.m. the following day.

The post-mortem examination (Dr. Hadden) did not reveal marked abnormalities of any other organs besides those from which the patient had suffered during life, except the lungs, which were highly œdematous.

Larynx, tongue, and part of the tumour were removed *en masse*, and are now in the museum of St. Thomas's Hospital. The specimen presented the changes described above, which it is unnecessary to repeat here. The interior of the larynx had remained quite free from new growth, nor was there any appreciable amount of acute œdema of the larynx. Microscopic examination (Mr. Stewart) proved the growth to be an epithelioma. The cause of death was very likely acute œdema of the lungs.

The most remarkable points in this case are: (1) the great age (eighty-two) of the patient, and (2) the localisation of the new growth in the epiglottis. It has been my lot to see an unusually large number of cases of laryngeal carcinoma, but this patient is by far the oldest I can remember in my own experience, and I only know of one other case recorded in literature (by Dr. Hopmann, of Cologne) in which a patient, the victim of this disease, had passed the age of eighty. Again, amongst all the cases of laryngeal carcinoma I have seen there is but one other in which the disease from the onset to the very last was limited to the epiglottis without invading the interior of the larynx. That in the present case the disease *began* in the epiglottis, and only later on affected the root of the tongue and the hyoid fossa, and led to secondary deposits in the cervical lymphatic glands, is, I think, plainly shown by the history of the patient, and by the appearance of the affected parts during life and after death. The other case referred to was that of a lady, æt. 65, spinster, who was sent to me on October 10th, 1881, by Sir James Paget. There was nothing particular about her history or other symptoms, but

the laryngoscopic appearances were so unusual that I will quote here the notes from my case-book:—"Pharynx free. Epiglottis changed into a shapeless nodular tumour at its base, the surface of which is in part ulcerated. *The middle part of its free border is completely and almost symmetrically eaten out by ulceration to a very considerable depth, so that the remaining lateral parts at first make almost the impression of two newly-formed horn-shaped projections.* The interior of the larynx and the œsophagus are quite free." These appearances, together with the concomitant symptoms, permitted a positive diagnosis of epiglottidean carcinoma. The patient died, I heard from Sir James, scarcely four weeks after I had seen her, from exhaustion. In her case, as well as in the one above described, the disease had run an unusually quick course, the time from the onset of the first symptoms until death being in the case of the man about seven, in the case of the lady about ten, months.

15. *A Case of Sarcoma of the Larynx.*

W. M—, æt. 51, porter, came on the 9th of June to the throat department complaining of loss of voice and difficulty of swallowing. His family and his own previous history were good. He had had gonorrhœa, but no history of syphilis could be obtained.

His present illness began about two years and a half ago. About that time he first felt some soreness and huskiness in the throat, which continued off and on for six months, when he attended the Throat Hospital in Golden Square for nine months. He got, however, gradually worse, especially during the last twelve months. His voice became constantly feebler, and his breath shorter. There used to be also a little soreness, but nothing to speak of. For the last four days he had had a sharp pain in the left side, which would catch him on taking a deep breath. Of late he had often had a cough with a good deal of glairy mucous expectoration.

Present state.—Patient is a fairly well-nourished man, but not healthy looking. Voice quite aphonic. Inspiration distinctly stridulous. Although breathing is apparently difficult he does not complain of any dyspnœa.

There is a good deal of general congestion of the pharynx and larynx. The left vocal cord stands almost immovable in the middle line; the right is but very little abducted during attempted deep inspiration, and does not come quite up to the middle line on attempted phonation. Both are superficially eroded, and the left ventricular band in a state of ulceration.

The right ventricular band is deeply congested, but not ulcerated. There is also some ulceration in the inter-arytenoid fold and on the posterior wall of the larynx, the sharp edges of the ulcers appearing in form of white polypoid excrescences in the inter-arytenoid fold.

The posterior cervical lymphatic glands are slightly but perceptibly enlarged on both sides. Pressure on the upper part of the larynx is painful on both sides. The outlines of the organ are not changed, and there is no swelling of the glands in its immediate vicinity.

Chest emphysematous; sternum prominent, and costal arch enlarged. Slight œdema of chest walls. Percussion note tympanitic. Breath sounds are feeble; the laryngeal stridor is conveyed to both apices. Much cough and much viscid expectoration. Heart's dulness pushed down; its upper limit at level of fifth rib. Impulse cannot be defined. Sounds are distant. Arteries rigid, easily seen pulsating; pulse somewhat stronger in the right than in the left radial artery. Pupils small and equal.

Abdomen: Several large superficial veins course upwards from the lower part of abdominal wall. There is a firm but small swelling in abdominal wall about the level of the umbilicus and at the outer edge of the left rectus muscle.

Liver is pushed down to the seventh rib in right nipple line.

Spleen natural. Bowels regular. Urine 1015, nothing of note, a few granular cells in deposit.

The patient was admitted on June the 12th into George Ward under Dr. Ord, and was ordered iodide of potassium, gr. x, three times a day.

June 20th.—No change in larynx.

22nd.—Patient does not feel at all well. Much blood-stained frothy sputum expectorated. Temp. 97·4°. Iodide of potash discontinued.

23rd.—Laryngeal ulceration is apparently a little better. There seems also to be a very slight improvement in the abduction of the right vocal cord.

25th.—Over the left half of manubrium and about one inch of the left half of xiphoid process, as well as over three fourths of the adjacent left side of chest, the percussion note is comparatively dull. There is also a distinct systolic murmur heard at apex and base of heart.

27th.—The laryngeal ulceration is distinctly worse.

July 7th.—Breathing more difficult and voice hoarser last night and this morning. Complains a great deal of headache.

10th.—The dyspnoea having got steadily worse during the last three days tracheotomy was performed at my desire by Mr. Pitts at 2.30 p.m. under chloroform. After the operation patient slept till 11 p.m., breathing very easily, a marked contrast to his condition before the operation.

11th.—Had a quiet night, though not sleeping all the time. Breathing this morning is free and easy, twenty-four to the minute. Temp. 99.4°.

21st.—The patient has continued to breathe easily and without pain. The temperature, which for a few days after the operation had an evening rise of about 1½°, has been normal for the past five days. Air enters both lungs on inspiration; the breath-sounds, though somewhat feeble, are natural. There is some dulness with deficient breath-sounds at both bases posteriorly, especially at the left. Respiration is quiet, about twenty-four to the minute. Patient has no pain, takes his food pretty well. Urine 1014, pale, turbid with phosphates, alkaline; no albumen.

24th.—Patient was yesterday put under chloroform, the tracheotomy opening was enlarged and a longer tube inserted. Patient slept very little last night, but seems easy this morning. Pulse 78. Temp. 98.6°. Breathing quiet and natural.

25th.—Patient much the same. Breathing continues easy and appetite good. He complains a good deal of thirst and his tongue is very dry, brown in the middle and red at the edges. The wound is very tender and he cannot bear it to be touched. Pulse full, 88. Temp. rose to 101° at 8 p.m. last night, this morning it has fallen again to 98.6°.

26th.—Comfortable night. Breathing easy. Pulse 78. Temp. $97\cdot6^{\circ}$ this morning.

28th.—India-rubber tube put in.

August 14th.—Patient complains of soreness of the throat, which is increased by swallowing. Nothing abnormal to be seen in pharynx.

15th.—Throat better, though it still hurts him somewhat to swallow. There is dulness on percussion over the lower half of the left lung posteriorly, with diminished breath sounds; at the upper limit of the dulness some pleuritic friction is heard. There is also some dulness at the lower third on the right side. Pulse 80. Resp. 27. Temp. $99\cdot4^{\circ}$ to $100\cdot2^{\circ}$. Laryngoscopic examination reveals *complete crossing of arytenoid cartilages*, both of which are very oedematous. The right one stands in front of the left. As always seen on previous examinations, the left vocal cord is still immovable in the median line. On attempted phonation and deep inspiration the posterior part of the right one moves very slightly to and fro, whilst its anterior part, which is much congested, remains closely approximated to the inner border of the left vocal cord. Both ventricular bands are ulcerated, the left one more than the right.

17th.—Patient more comfortable, throat less sore, breathing easier. There is still some dulness at the lower third of the left lung posteriorly, and to a less extent over the base of the right lung. The temperature rose from the 13th to the 17th inclusive every evening to a little over 100° , and fell in the morning to the normal.

25th.—Fine crepitation to be heard at both bases posteriorly, more on left than on right side. Absolute dulness at left base posteriorly. Sputa not rusty, nummulated. Temp. towards the evening rises to about $100\cdot5^{\circ}$. Stimulating expectorant ordered.

31st.—State of lungs almost the same as on the 25th. Laryngeal ulceration and oedema distinctly less. Glottis wider than ever seen before.

September 15th.—On laryngoscopic examination very distinct ulceration of left ventricular band is seen, *whilst the left vocal cord is changed into a white, thickened, ulcerating mass*. As on former occasions it cannot be distinctly made out

whether the whitish mass connecting the anterior thirds of the vocal cords is really new growth or only very tenacious phlegm. The crossing of the arytenoid cartilages is much less distinct than about a fortnight ago. Temperature in the mornings varies from 98.5° to 99.5° , in the evenings from 100.4° to 101.5° .

24th.—State of larynx the same. Some dulness on left side of sternum in second intercostal space. Coarse crepitation posteriorly all over the lungs.

26th.—Very coarse crepitation all over both lungs, especially the right. Temperature has never risen to 100° since the 22nd. Patient is sinking fast.

27th.—Death.

Post-mortem (Dr. Hadden).—Larynx and lungs removed *en masse*. The inter-arytenoid fold and posterior wall of larynx are swollen and ulcerated. The glottis is much narrowed, not admitting the tip of a finger. The left vocal cord is ulcerated, the surface being white and soft. The right vocal cord is also ulcerated, though more slightly. The trachea was found to be displaced backwards and to the right by a mass of new growth, situated in front of it, apparently in the position of the glands, and reaching down to its bifurcation. The mass was almost concealed by the anterior edges of the lungs. It lay more to the left than to the right of the middle line. On section it was found to be very soft, white, and blood-stained in parts. Microscopically small round cells were seen. The growth would appear to be a sarcoma.

Beneath the pleuræ were some slightly-raised, white, lenticular masses of new growth. At the apices of both lungs there was a decided increase of fibrous tissue. Scattered through the lungs, but best marked at apices, were numerous small, round, raised bodies like miliary tubercles. Lungs were congested and œdematous, also emphysematous.

Liver contained numerous masses of new growth from the size of a walnut downwards. They were white, not very soft, not degenerated in the centre, and very circumscribed. Most of these masses abutted on the surface.

Kidneys of about normal size. Capsule adherent; surface granular. Cortex firm and narrowed. There were a few bodies like miliary tubercles in the cortex.

The other organs were normal or nearly so, and not invaded by new growth.

Post-mortem diagnosis.—Malignant disease of larynx, bronchial glands, liver, kidneys, &c.

I have communicated this case very fully for two reasons. On the one hand, because sarcoma of the larynx—and I think there can be little doubt, seeing the result of the post-mortem examination, that the laryngeal mischief in this case was of a sarcomatous nature—is a very rare affection; on the other, because it appears to me that a simple report of the case best illustrates its diagnostic difficulties. I must indeed confess that I could not bring myself to make a positive diagnosis as to the nature of the patient's laryngeal affection during lifetime. I thought, of course, of carcinoma, of tertiary syphilis, of phthisis, of nervous paralysis due to mediastinal mischief. But though there were certain points of similarity with every one of these affections at one time or other whilst the patient was under observation, none seemed entirely to account for all the symptoms, and still less for all the changes noted. What puzzled me most was the *combination of bilateral impairment of mobility with ulceration* of the vocal cords, which was observed from the very first. There was dulness to the left side of the sternum, drawing attention to the possibility of mediastinal new growth or aneurism of the aorta, and pressure upon the recurrent or pneumogastric nerves. That would have satisfactorily enough explained the impaired immobility of the cords, but why the laryngeal ulceration? Then, again, the idea of phthisis crept up. But there was until a very late stage of the disease absolutely nothing in the patient's other symptoms to corroborate that idea; the existence of a primary laryngeal tuberculosis, though quite possible, is by no means yet proven; the immobility of the left, and the nearly complete immobility of the right, vocal cord, coupled with the ulceration, would have pointed to very far advanced (perichondritic) phthisical changes in the larynx, and it is quite against my experience that such changes should take place without concomitant plainly-developed lung symptoms and general systemic disturbance (elevation of temperature, emaciation, &c.). Against tertiary syphilis was not only the absence of any history or of any other corroborating sign,

but still more important the inefficiency of the iodide-of-potash treatment. Thus nothing but carcinoma appeared to be left—I confess that I did not think of sarcoma at all,—but against that view militated the repeated changes for the better, not only in the patient's general health, but also in the laryngoscopic appearances, which have been reported above. And, finally, I must say that there was a certain something in the colour and general appearance of the tumefaction and ulceration which distinguished the laryngoscopic image seen in this case from those ever seen by me in any of the previously-quoted diseases. The colour of the affected parts was of a much more pronounced uniform white (especially in the later stages of the disease), and the consistence of the tumefaction on the left side was apparently much softer than I remember ever having seen before in a case of laryngeal ulceration (the appearance might not inaptly be compared to that of a piece of white brain substance).

I thus left the diagnosis *in suspenso* during lifetime. The post-mortem examination brought the solution of the problem. I am exceedingly sorry that I am unable to adduce further details, especially concerning the condition of the crico-arytenoid joints, and the microscopic examination of the affected parts of the larynx. But unfortunately the post-mortem examination was made on the very day when I left town for a long journey abroad; I was not present at it, but only saw the specimen for one moment previous to my leaving the hospital on that day, and although I specially desired it to be preserved it got lost somehow, and in spite of strenuous efforts I have not since been able to discover it. The case, however, is so full of interest that I thought I ought to communicate it in spite of its not being so complete as might be desired.

16. *Anchylosis of the Crico-Arytenoid Articulation.*

Four cases came under observation.

CASE 1.—*Anchylosis of the left crico-arytenoid articulation after traumatic perichondritis.*—The patient is the boy from whose larynx a walnut shell was removed by means of thyrotomy by Mr. Croft, and whose case is described by Dr. Stone

in the '*Med. Times and Gazette*,' November 6th, 1880. The entire left half of the larynx is seen to be immovable, the left arytenoid cartilage is much thickened, and the left ventricular band, which is much swollen, completely covers the left vocal cord. The right arytenoid cartilage is dislocated forward; the glottis, on attempted deep inspiration, cannot be opened sufficiently, and the patient is unable to dispense for any length of time with the tracheal tube. Voice fairly good. Attempts at gradual dilatation of the narrowed part by means of daily introduction of Schroetter's hollow bougies into the larynx failed, and had to be given up after a short time on account of the irritation and congestion of the parts which they produced.

CASE 2.—T. B—, æt. 50, labourer, in-patient under Dr. Stone. Tertiary syphilis; deep and destructive ulceration of larynx. Complete ankylosis of left crico-arytenoid joint. Left arytenoid cartilage greatly swollen. Left vocal cord immovable, nearly in middle line. Mobility of right vocal cord and arytenoid cartilage at first greatly impaired, but gradually, together with ulceration, improving under antisyphilitic treatment. Fixation of left side persistent. Patient attends still (May, 1883) as out-patient in the Throat Department, every attempt at giving up for any length of time the iodide of potash, which he takes regularly, being followed by fresh ulceration of the larynx.

CASE 3.—C. M—, æt. 40, traveller. Old case of tertiary syphilis of the larynx. No active disease now, but complete fixation of the left half of the larynx with thickening of left arytenoid cartilage, and traces of old ulceration on both vocal cords.

CASE 4 (?).—P. S—, æt. 43, married. Tertiary syphilis of pharynx and larynx. Large perforation of soft palate. Large ulcer on posterior wall of pharynx. Thickening and ulceration of epiglottis. Great thickening of right arytenoid cartilage with general ulceration of the right ary-epiglottidean fold, the right ventricular band and the inter-arytenoid fold. Right vocal cord immovable in cadaveric position. Almost complete aphonia. The patient came once only.

17. *Iodoform as a Local Remedy in Laryngeal Phthisis.*

A good deal of discussion has been going on during the last year on the Continent as to the utility or non-utility of local applications of iodoform in cases of laryngeal phthisis. The general impression I have received from the controversy is that there has been too much rushing into extremes. On the one hand, iodoform has been enthusiastically recommended as an almost certain cure for phthisical laryngeal ulcers; by the other side its success is more or less flatly denied; it is spoken of rather disparagingly; and we have even been dissuaded from using it on account of its dreaded poisonous effects, its bad taste and smell, the sickness, which it is reported to have produced in some instances, and on account of the hæmorrhages which it was inferred, from experiments on animals, its application was likely to produce.

From my own observations, which were very regularly conducted in a not inconsiderable number of cases (15), of both in- and out-patients, I would fain occupy an intermediate position, but still one of grateful appreciation of this remedy. I have seen and carefully followed up two cases, in which I think I am entitled to speak of the curative effect of iodoform, *so far as the laryngeal ulcers were concerned*. I will say at once, that in the whole of my experience these two are the only cases in which I have seen an *actual healing up of what I must consider from all my experience to have been tubercular ulcers*; and I will further qualify my statement by saying that if I speak of a "cure" I do not mean that the whole of the upper respiratory passages have *remained healthy ever since the ulcer healed!* I call a "cure" in this connection merely a return to normal conditions, with or without scarring of parts, in which for a considerable time active ulceration had been observed to be going on. This I have actually seen in two cases. The first of these is still under observation in the throat department. The patient is a man æt. 31, who applied on March 21st, 1882, for hoarseness, sorethroat, pain in the right half of chest and between the shoulders, night sweats, and loss of flesh. There had been repeatedly slight hæmoptysis. On

examination, signs of consolidation of right and rather harsh breathing at left apex were noted. In the larynx "an ulcerating swelling on the left ventricular band, ulceration of the inter-arytenoid fold and of the posterior part of the left vocal cord, near the vocal process, were detected." After three weeks daily insufflations of iodoform (Ol. Morrhuæ c. Syrupo Ferri phosph. being given internally), the laryngeal ulcerations began to heal. On the 30th of May there is a note: "At this date the ulceration in larynx has quite healed, only slight œdema of the arytenoid cartilages now remaining, and a slight swelling under the left vocal cord in the situation of the former ulcer." The pulmonary process also appearing to be arrested, the patient was told to come up every four weeks for periodical examination. I can now report that up to the present (May, 1883) there has been no return of laryngeal ulceration, but about three months ago he complained of sorethroat, and on examination several small ulcers were detected on the anterior wall of the trachea. These also speedily healed under insufflations of iodoform. The lung disease has remained stationary. Throughout this time there was no hæmoptysis. The second case is one occurring in private practice. The patient, a gentleman, æt. 35, was sent to me on March 31st, 1882, by Sir Andrew Clark, on account of complete loss of voice. Apart from the usual constitutional symptoms there was dulness on percussion in the two first intercostal spaces on both sides, especially on the left, with diminished entry of air, somewhat prolonged expiration, and occasional metallic râles. Larynx much congested, in the middle of the left vocal cord an ulcerating swelling. Under daily insufflations of iodoform this ulceration healed *completely* in the course of one month, a fact of which both Sir Andrew Clark and Dr. Ralfe convinced themselves, the pulmonary affection in the meantime undoubtedly advancing. In consultation with the two last-named gentlemen, it was decided that the patient should go abroad and spend the summer in Switzerland, the winter at the Riviera. Whilst at the Lake of Lucerne fresh ulcerations broke out, I am informed by Dr. Nager of Lucerne, about the month of June, this time on the right vocal cord. *Applications of tannin and of nitrate of silver produced no good effect, but this time again the ulceration healed under insufflation of iodoform.* The last time I

heard of the patient was on the 23rd of November, 1882, when he was staying at San Remo, and had, I was informed, greatly improved in every respect, the larynx in particular being quite free.

These two cases then are the only ones in which a result amounting to a cure was obtained from the local use of iodoform. It is difficult to say why the result in these two cases should have surpassed those seen in all the others. I must not omit to report that in the first case there was a distinct, and in the second a doubtful, history of syphilis; but although I have seen several cases in which there was a combination of phthisis and syphilis, and although I know that in such cases it is often excessively difficult to form an opinion from mere laryngoscopic inspection as to whether the ulceration seen in the larynx is of a phthisical or of a syphilitic nature, I must say that no such difficulty was present in either of these cases, the ulceration in both bearing the distinct adynamic phthisical type. Moreover, in the first case I gave at once iodide of potassium, *before the local applications of iodoform were commenced*, without obtaining any improvement, and again in the second case iodide of potassium had been ordered by Sir Andrew Clark, without improving the state of things in the larynx, before he sent the patient to me. I think, therefore, I am justified in considering the ulceration in each case as phthisical.

But, granting that the result in these two cases was an exceptionally good one the results obtained in almost all my other cases, were satisfactory enough *considering our utter helplessness in dealing with this painful and important complication of pulmonary phthisis*. My general experience coincides so fully with what my friend Dr. B. Fränkel stated last year in a paper read before the Berlin Medical Society, that I cannot do better than describe what I have seen, in his words:¹ "I used iodoform," he says, "first in laryngeal phthisis, selecting cases in which the diagnosis was warranted beyond doubt by the appearance of the ulcers as well as by other complications. In consequence of my proceeding upon this principle the majority of the eleven patients thus treated were cases in which the phthisical process was much advanced, and extensive lenticular ulcerations, in three cases even peri-

¹ 'Berliner klinische Wochenschrift,' 1882, No. 17, p. 252.

chondritis were present. In two cases only smaller ulcers existed on the posterior wall of the larynx. I powdered the ulcers once daily with iodoform, and I was sometimes able to see the powder some hours later on the spot, but never on the next day. At the commencement of my trials I was greatly misled by my success. The ulcers got clean, healthy-looking, small granulations sprang up, and it looked as if they were going to heal. To-day I think otherwise, for in spite of the unmistakeable improvement in the appearance of the ulcers, and in spite of the process extending apparently more slowly under the influence of iodoform, I have not cured one of the eleven cases, although several of the patients have been treated in this manner for months. The circumscribed ulcerations still exist—iodoform, therefore, is no panacea against this dreadful disease. I should not, however, like to be understood as if I were now going to give up iodoform in laryngeal phthisis. The number of my cases is too small to allow of a definite judgment on its therapeutical effect in a disease like laryngeal phthisis, which is so inaccessible to any treatment. Each time that I beheld the appearance of the ulcers after they had been treated with iodoform my vanishing hope revived. The patients themselves lent support to this hope, as they felt comparatively well under the treatment. Its long continuation in several of the cases is in itself a proof that the patients liked it. They asserted that they felt a *decrease of their complaints*, and when I changed the treatment, they wished to have the 'yellow powder' again. I therefore summarise the experience I have hitherto gained by stating that iodoform has a certain favorable influence upon tubercular ulcers of the larynx, but that I have not yet seen a case of cure."

Such is Fränkel's opinion. Similar views have been expressed by Schnitzler, Dreschfeld, and others. My own experience leads me to subscribe to every word the first-named author says, except that in the two cases I have given above a full success was obtained, which is more than he was able to report. On the whole, I should summarise my own experience by saying that regular applications of iodoform in powder to the ulcerations of laryngeal phthisis produce *cleansing*, and in many cases *diminution in size, of the ulcers*, often *diminution of the surrounding oedematous infiltration*, *decrease of pain and soreness*,

and frequently considerable improvement of the *dysphagia* and *odynphagia*, which had previously formed some of the most distressing and most serious features of the disease.

All this, it is true, does not amount to a cure, but still it is much, I repeat, considering our former utter helplessness in dealing with this sad complication of pulmonary phthisis. In 1880, so experienced an authority as Morell Mackenzie, after stating ('Diseases of the Throat and Nose,' vol. i, pp. 384 and 385) that the local treatment he was in the habit of using consisted in insufflation of morphia and in scarification, if there was much œdema, concluded his directions as to the local treatment of laryngeal phthisis by saying: "These are the simple measures which, after trying many plans of treatment, I have been induced to adopt." This, I need not say, amounts to a confession of the melancholy fact, that we were at that time utterly incapable of producing more than purely palliative effects, and if iodoform should prove of such service in the generality of cases as it proved in the cases treated at St. Thomas's and in my private practice, I think that, far from relinquishing its use at once because "it does not cure," we ought to be very grateful for having got hold at last of a remedy which, even if it does not cure, yields so much better results than any other formerly known. I have never seen hæmoptysis follow its use, although in a few of the cases in which there had been hæmoptysis before iodoform was employed, the bleeding was certainly not stopped by the local application of the drug. I have never seen poisoning result, although in several cases in which patients were treated in the hospital, two grains of iodoform (one in the morning, one in the evening) were insufflated daily. In but very few cases did I hear sickness complained of, and this always happened in those in which insufflation of one sixth of a grain of morphia produced the same result. The taste and smell of the remedy were never seriously complained of by a single patient. Almost all my patients, like Fränkel's, learnt soon to appreciate the value of these insufflations, and indeed it was exceptional to hear it stated, even in very advanced cases, that the remedy was not productive of any beneficial effect. Until we are in possession of a really curative remedy, I shall continue to use iodoform applications in laryngeal phthisis, and shall feel

justified in recommending them. It goes without saying, that they are recommended in cases of ulceration only, not in cases of simple œdematous infiltration or of impaired mobility of the parts. The formula I make use of is—

R Iodoformii.

Acid. Boracic., āā gr. j.

Morph. Acetat., gr. $\frac{1}{6}$.

M. f. pulv. D. S. Ad insufflationem.

If circumstances permit, two such powders should be insufflated daily, one in the morning the other in the evening. If this should be impossible one application must, and in most instances will, suffice. It is surprising how little local irritation is caused by the insufflation, even of pure iodoform. The patient ought to clear his throat before the application, and ought to hold his breath for a few seconds after it, when the involuntary reflex incitement to coughing will generally be gone.

In conclusion, I do not consider it superfluous to insist on the necessity of making every application *under the guidance of the laryngeal mirror*. I have elsewhere shown¹ that in consequence of the variable configuration of the parts, and especially of the epiglottis, in different individuals it is quite impossible to know whether the end of the tube containing the powder is pointing into the larynx, into the pharynx, or into the œsophagus, unless the physician's hand is controlled by his eye, and I need not say that the effect will be a very different one if the remedy be applied to other parts than those which are actually diseased. The non-observation of this cardinal rule is almost sure to lead to disappointment and unjust contempt for a method and a remedy which are most valuable if properly applied. I prefer the tube insufflator to Rauchfuss's instrument, for the reasons stated by Dr. Mackenzie in his repeatedly-quoted work on p. 251. I have never found any patient objecting to the physician using his own lungs and mouth as the propelling forces of the powder—a contingency dreaded by some practitioners—and I believe that this objection against the undoubtedly more practical form of the insufflator belongs to the class of purely theoretical obstacles.

¹ German edition of Morell Mackenzie's above quoted work, p. 320, footnote 1.

18. *A Case of Erysipelas of the Larynx; Pyæmia. Death.*

H. D—, æt. 21, hawker, a strongly-built, fine-looking fellow, applied on December 29th to the throat department. He stated that he awoke on the previous day with a swelling on the left side of the neck and constant pain in the throat, which was increased on pressure, and which prevented him from swallowing. He could not attribute it to any direct cause, and stated that he had always enjoyed good health. There was a somewhat obscure history of syphilis.

On examination a swelling was seen occupying the whole left upper half of his neck, extending behind to the mastoid process, and to a line drawn from there perpendicularly downwards to the left clavicle, and inwards under the chin to the median line. No perceptible swelling was seen over the larynx, but there was great tenderness on pressure. All the swollen parts were hot and œdematous, and gave the impression of infiltration of the cellular tissue in the cervical region. Although no swelling was visible underneath the clavicles, an erysipelatous redness extended down on both sides to about mid-sternum, and the chest walls within the limits of the redness were slightly œdematous on pressure.

Internally acute follicular tonsilitis, more especially on the left side, was seen. *The larynx was seen to be pushed towards the right side. The left half of the epiglottis and the left arytenoid cartilage were enormously swollen, œdematous, and of a dusky red colour. The epiglottis was considerably twisted; the right half of the larynx much congested.* The voice was almost extinct and there was considerable dyspnoea. Temp. 103·4°.

The patient was recommended for immediate admission, and at once taken into William Ward under Mr. Mason's care. A steam kettle was kept by his bed, the neck covered with cotton wool, and Pot. Iod. gr. x, Tinct. Ferri Perchlorid. ℥xx, Glycerin ʒj, ter die, ordered.

January 1st, 1883.—Breathing much easier, although his sleep is sometimes broken. He wanders slightly. Temp. 103·6°. Bowels open. The larynx is nearer middle line. About 4 o'clock this morning he had a little shivering, and his

temperature rose to 104° . Has vomited after medicine. Since admission he has sweated a good deal, and is doing so now. The swelling on left side of neck is more circumscribed, it is situated to the left of the thyroid cartilage, and extends downwards under the sterno-cleido-mastoid, tapering off towards the sternum, and not moving with the larynx in deglutition. There is decided tenderness on pressure, chiefly when this is applied from behind. No evidence of fluctuation. Temp. at 8 p.m. 105° . Sulphate of quinine ordered.

2nd.—Has passed a sleepless and delirious night. The swelling on left side of neck has to a great extent returned. Breathing is becoming more difficult. Temp. 104° . Tongue dry and deeply furred. Breath offensive.

3rd.—Has had a very restless night, requiring two people to keep him in bed. Is delirious now and quite sleepless. Takes his nourishment well. Temp. at 8 a.m. 104° , at 8 p.m. 101.8° . Hydrate of chloral ordered.

4th.—Very restless all night. Slept a little after a second draught. Tongue furred and dry. The middle joint of right index finger and the centre of dorsum of left hand are swollen, red, and very tender. No rigors or excessive sweating. Temp. at 8 a.m. 104° ; at 8 p.m. 101.6° . Oedema and displacement of larynx much diminished, though not entirely gone (after this date it was impossible to make a laryngoscopic examination on account of the condition of the patient).

5th.—No rigor, but patient shows no improvement. The swellings on hands, mentioned yesterday, are increasing, and the patient is also complaining very much of pain across front of chest, epigastric region, and in left side of neck, which is much increased by breathing. Respirations 52. Temp. 8 a.m., 103° . There appears to be a pleuritic friction sound over the spot in the chest (pericardial region), where the patient complains of most pain, and over the apex of the heart; and there is another faint sound resembling pericardial friction, but the latter is distinct from the heart sounds and does not accompany them. Urine 1026, no albumen. In the afternoon the pleuritic friction was more distinct. Poultice applied round thorax. Liq. Morph. hyp. m v . Temp., 8 p.m. 102.6° .

6th.—Delirium has disappeared. Marked subsultus tendinum. Throws up a good deal of blood-stained sputum.

Abscesses on hands extending. Temp., 8 a.m. $99^{\circ}8'$, 8 p.m. 101° . In the evening an incision was made into the abscess on left side of neck on account of great dyspnœa, a small quantity of healthy pus evacuated, and a drainage-tube inserted.

7th.—Temp., 8 a.m. 100° , 8 p.m. $101^{\circ}4'$. Patient evidently sinking.

8th.—Temp., 8 a.m. 102° , resp. 44, pulse 128. Fluctuation on dorsum of left hand. Has passed a restless night. Temp., 8 p.m. 103° .

9th.—Purpuric eruption on elbows and thighs. Restless night but without delirium. Complains of weakness. Temp. at 8 a.m. $100^{\circ}6'$, resp. 40. Rhonchi all over the chest. No discharge from the abscess in neck. Tongue furred and very dry. Perspiring freely. Face dusky. Much thirst. Bowels open. Temp. at 8 p.m. 100° . Patient died during the night.

Post-mortem examination (January 10th, Dr. Sharkey).—Body well formed and well nourished. Incision about an inch and a half long in anterior triangle of neck on left, leading into an abscess cavity, which passed a short way up and down, but not very deeply.

The tonsils were large, firm, and thickened by chronic inflammation, and there was some general inflammation, without ulceration, of pharynx. There was considerable œdema of the larynx, but no ulceration of vocal cords, &c., and no disease of cartilages.

Almost immediately opposite the abscess cavity on the left side was another abscess on the right, which had not been opened ante mortem. Out of it came healthy yellow pus, and the floor of it was formed by the thyro-hyoid membrane. The upper border of the thyroid cartilage was bared of the perichondrium over a small area. The abscess cavity did not pass far in any direction and did not lead to diseased bone. The vertebræ of the neck and the base of the skull were healthy.

Thorax: on opening the thorax the left pleura was found to contain five pints of slightly turbid fluid, and the left lung was completely collapsed and airless. The visceral pleura was covered with recent lymph. There was no pneumonia. The parietal layer of the pleura was injected and partially covered with lymph. The right pleural cavity and pleura were in a similar condition in the lower half of the chest, while in the

upper half the two layers of the pleura were glued together by old firm adhesions. There was no evident connection between the inflammations in neck and thorax.

The heart was normal, but the pericardium was dotted about the base of the heart with punctiform hæmorrhages.

Liver, spleen, kidneys normal.

The peritoneal cavity contained an ounce or two of turbid and red-stained serum, and the intestines were greatly distended.

In the subcutaneous tissue of dorsal aspect of both hands were abscesses containing healthy pus, and the joint of the left index finger, between the metacarpal and first phalangeal bone contained similar pus.

Brain normal.

The surface of the body was dotted here and there with punctiform petechiæ, and there were copper-coloured stains on limbs and trunk.

Post-mortem diagnosis.—Pyæmia *ex causa ignota*. Abscesses in neck. Œdema of larynx. Double pleurisy. Peritonitis. Superficial abscesses.

It is thus seen that neither the previous nor the clinical history, nor even the post-mortem examination, shed any light upon the cause of the disease and upon the connection of the different symptoms observed in this remarkable case, but at the same time the co-existence of erysipelas of the external integument leaves scarcely any doubt as to the nature of the laryngeal disease. Where the disease originated, *i.e.* whether within the cellular tissue of the neck, in the tonsillar inflammation, or primarily within the larynx, is a question which I do not venture to decide positively. From the fact, however, that the larynx was so much pushed to the right side, and that its left half only was so much infiltrated, I am inclined to think that the starting point of the inflammation was in the cellular tissue in the left side of the neck.

19. *A Pin Impacted Thirteen Months in the Larynx in a Boy æt. 13, and causing Impairment of Mobility of left half of Larynx. Removal by internal operation.*

This case was brought by me before the Clinical Society on April the 13th of this year, and will be published in full in

the Society's 'Transactions.' The main points of interest are indicated in the title which I have given to the case. The boy was an in-patient of Mr. Sydney Jones, who very kindly transferred him to me.

20. Motor Paralyses of the Larynx.

Two cases of complete paralysis of the left recurrent laryngeal nerve occurred in men suffering from distinct evidences of aortic aneurism, and one in a case of œsophageal carcinoma. In two the cause could not be distinctly made out during the short time the patients attended. In the one in which the right vocal cord remained immovable in the cadaveric position, and which occurred in a case of pulmonary phthisis, I believe that the paralysis was due to implication of the right recurrent laryngeal nerve in pleuritic adhesions close to the apex of the right lung; in the other case, in which the left recurrent was affected, the origin was quite obscure. Three of the cases occurred in men, two in women.

The cases of abductor paralysis seen during last year were all unilateral. Of these four occurred in men, two in women. In one of the two female cases the paralysis existed on the left side. The voice was perfectly normal. There was some suspicion of a mediastinal tumour, but during the time the patient was in the hospital under Dr. Ord, no distinct evidence to that effect could be obtained. The other female case is still under treatment, and I had better postpone its communication to a later occasion. Suffice it to say that it is a very remarkable case, the patient being a victim of infantile paralysis as well as of hereditary (?) syphilis, and the laryngeal paralysis, which affects in this case the right abductor, being almost beyond doubt produced by pressure of some deeply situated enlarged lymphatic gland upon the right pneumogastric nerve. The main symptom in this case was pain in the larynx. The voice is, and has throughout been, perfectly normal.—Of the four men—the paralysis in one was the first and for a long time the only objective symptom of œsophageal carcinoma; the left abductor being the one affected. In a second case the etiology was and

has remained obscure. In both these cases also the voice was perfectly normal. The third case was that of a police inspector, who was in George Ward under Dr. Ord with aortic aneurism. In his case the left abductor was affected, and the paralysis gradually affecting the other laryngeal muscles supplied by the left recurrent laryngeal nerve, the voice got weaker and weaker whilst he was in the hospital, the left vocal cord at the same time assuming more and more the cadaveric position. The last case was remarkable on account of its unusual cause. It was a case of paralysis of the right abductor due to a dissecting aneurism of the innominate artery, and occurred in a man, æt. 60, an in-patient of Mr. MacKellar's. His complaints were loss of voice and difficulty of swallowing. The voice was weak but not hoarse. There was no dyspnœa. A swelling was discovered over the inner third of the right clavicle with a good deal of pulsation below this bone. There was no pain, and the patient was unaware of the existence of the swelling. On laryngoscopic examination I found paralysis of the right posterior crico-arytenoid muscle, the right vocal cord standing immovably in the mesial line and being slightly excavated (paralysis of internal tensor?). The disease was stated to have commenced only nine weeks previously. One week after the laryngoscopic examination (on August the 22nd) the patient became suddenly much worse, had great difficulty in breathing, and spat up some blood. He died the same night. From the post-mortem report (which did not present other points of unusual interest) I quote only the statements bearing upon the point under consideration.

“In connection with the innominate artery there was an aneurismal cavity capable of containing about one fluid ounce. It projected principally backwards, extending almost as far as the longus colli muscle. The aperture of communication with the artery was situated posteriorly one and three quarter inches from the commencement of the vessel; it barely admitted the tip of the index finger. The aneurism was found to have burst both into the œsophagus and the trachea, the aperture of communication with the œsophagus admitting two fingers, that with the trachea one. The aneurismal cavity was filled with soft clot, and a similar clot was also found in the larynx. *The right recurrent laryngeal nerve was involved in the*

walls of the aneurism. *The right crico-arytenoideus posticus muscle was considerably paler and smaller than the left.*"

Having only recently¹ demonstrated the fact that the abductor fibres of the recurrent laryngeal nerve possess a proclivity to becoming affected sooner than the adductor fibres, or even exclusively, in cases of undoubted central or peripheral injury or disease of the roots or trunks of the spinal accessory, pneumogastric or recurrent laryngeal nerves, and hoping soon to submit elsewhere an explanation of this curious fact to the profession, I refrain from discussing the point on this occasion. I may however be permitted to draw attention to the fact, *that in four out of the six cases the voice was perfectly normal, and that in none of the cases was there any dyspnœa*, both points being of considerable importance in diagnostic respects. For if there be neither dyspnœa nor vocal impairment it is more than likely, as matters stand at present, that no laryngoscopic examination at all will be made in cases like those just reported, and thus no doubt the existence of an abductor paralysis, valuable as it is for the diagnosis of an otherwise obscure case, will be often entirely overlooked.

As regards paralysis of the adductors, this form was observed eighteen times, once in a man, all the other cases occurring in women. In all cases the paralysis was purely functional, and I am happy to report that all the cases were cured by endolaryngeal faradisation. The time of the treatment, however, varied very considerably. In the great majority of cases *one* faradisation was sufficient to produce immediate and lasting return of the voice, even after long existence of the paralysis—thus, *e. g.* in a patient of Mr. Mason's, who had lost her voice for four years—whilst in a few instances repeated applications were necessary; and whilst in two females (the one a patient of Dr. Bristowe, the other of Dr. Stone) a very protracted endolaryngeal treatment (several faradisations being daily made) was required before the voice was restored. In Dr. Stone's case the cure is permanent, as I had the opportunity of convincing myself a few days since; Dr. Bristowe's patient returned a fortnight ago, suffering from a relapse, which, however, promises to yield speedily to renewed faradisation. The case of the male patient was rather curious. Functional paralysis of the adductors

¹ 'Archives of Laryngology,' vol. ii, No. 3, July, 1881.

in men is altogether rare, and this patient, a strongly-built, fine fellow, who had lost his voice without any known cause about a fortnight previously, looked the very last man to suffer from that essentially hysterical complaint. The appearance of the parts, however, was unmistakable, and one endolaryngeal application of the faradic current immediately restored his voice. Of two of the cases, occurring in female patients, I shall have to speak elsewhere in discussing the etiology of laryngeal paralysis in general.

In one case, that of a hawker æt. 35, paralysis of the internal tensors (thyro-arytenoidei interni muscles) was observed. The vocal cords were normally approximated posteriorly on attempted phonation, but a *small* elliptic opening remained between their two anterior thirds. The voice was quite aphonic and had been so for several weeks. On my telling the patient that the first condition of recovery was complete rest of voice, he did not put in his appearance again.

The two last instances of laryngeal paralysis which came under observation, were two cases of isolated paralysis of the central adductor (arytenoideus proprius muscle). In one of them diphtheria was stated to have initiated the aphonia, in the other no cause could be assigned. Both cases occurred in females. In both the characteristic position of the cords on attempted phonation—the cartilaginous part of the glottis forming a small open triangle, whilst the anterior three fourths of the cords are well approximated towards each other—was seen, and there was complete aphonia in both. Endolaryngeal faradisation, applied to the inter-arytenoid fold, quickly effected a cure in both cases.

21. *A Case of Aphonia Spastica (Spasm of the Tensors of the Vocal Cords).*

I am excessively sorry that I can hardly say more than that a case of this very rare, interesting, and obscure disease was seen in the Department.

At the end of a heavy afternoon's work, a man, æt. 51, cook on board a ship, came in, whose voice immediately attracted my attention. Whenever he attempted to speak he produced

but *one* sounding syllable, the rest of the sentence being completely lost in fruitless and evidently very distressing attempts at sending a current of air through the spasmodically closed glottis. This is not an imaginative description, for the condition just described could be very well seen with the laryngoscope. The vocal cords, which were perfectly white and normal came well together on the patient being told to say "a," but only one short sound was heard, the glottis closing immediately so spasmodically that it almost appeared as if one vocal cord was overlapping the other. Not nearly the same painful inability of making himself understood was present when the patient whispered, but even then he laboured apparently under considerable difficulty in getting air to pass through the glottis. Respiration was entirely free and noiseless. The patient stated that he had been suffering from this troublesome affection for nine months, and that he had applied to a great many hospitals in the north of England and in the midland counties, but without receiving the slightest benefit so far as his voice was concerned. He was quite well, he said, in all other respects. He wished to know whether I could cure him. On my replying that I could not give a positive promise, but that I did not think his case was utterly hopeless, he promised to come again the next morning for the purpose of a more accurate and complete examination, but he did not do so.

22. Isolated Tertiary Syphilis of the Trachea.

Two instances of that rare localisation of tertiary syphilis came under observation. Both occurred in females.

The one, M. C—, in-patient of Dr. Ord's, had previously suffered from other severe manifestations of syphilis, and came into the hospital for constant great difficulty of breathing, aggravated from time to time by most serious attacks of suffocation, several of which were witnessed while she was in the hospital. Relief from these attacks always came with the expectoration of tenacious muco-purulent phlegm. Respiration was always stridulous. I examined her often with sunlight and lime-light, and could see a considerable part of the trachea, which as well as the upper portions of the air passages appeared quite healthy

and did not show traces of old ulcerative disease, but I could never see so far as the bifurcation. The patient was ultimately quite cured by iodide of potassium, and left the hospital breathing freely. Considering that the respiratory sounds were equally sibilant and stridulous in both lungs, I have little doubt that there must have been some gummatous infiltration leading to ulceration in close proximity to the bifurcation, the dyspnœa being spasmodically aggravated by the impaction of pulmonary secretions in the narrowed portion.

The second case was that of a woman, æt. 46, who came to the Throat Department complaining of sorethroat. The pharynx, showed evidence of old, deeply destructive ulceration, the uvula and the central part of the soft palate being entirely lost, there being a large stellate cicatrix on the posterior wall of the pharynx, and the palatal pillars being entirely disfigured by cicatricial adhesions between each other and to the posterior wall of the pharynx. The larynx was perfectly healthy. On the anterior wall of the trachea, immediately under the cricoid cartilage, a recent large ulceration, forming apparently the segment of a circle and extending over two or three tracheal rings, was seen. The lower part of the trachea was quite healthy. There was no dyspnœa, and the voice was normal. No other recent evidence of syphilis was present, but there were numerous copper-coloured spots about her body and perceptible thickening of the tibiæ. Iodide of potassium soon effected a cure.

23. Continuous Watery Discharge from Left Nostril in a Case of Optic Neuritis.

This curious case has been fully described by Mr. Nettleship in vol. ii (Nov. 15), 1883, of the 'Ophthalmic Review.' (Two similar cases are described in the same number by Mr. Priestley Smith.) Examination of the nose by anterior and posterior rhinoscopy threw no light upon either the cause or the source of the discharge. For details I must refer to the original.

There were a good many more points of interest in connection with the affections dealt with in the above remarks, as well as

in other cases which have not been mentioned at all ; but being afraid that I have already almost overstepped the space which can be assigned in the reports of a general hospital to the details of a single department, I propose to discuss them in my next report, and I conclude my contribution with statistics illustrating the work done in the Department.

STATISTICS OF DISEASES TREATED IN THE THROAT DEPARTMENT.

The total number of patients seen in the Throat Department from January 22nd, 1882, when I took charge of it, until December 31st of that year, was 540. Of these 35 were immediately transferred to other departments, because the throat symptoms played only a subordinate part in their affections. Of the remaining 505 221 were men, 284 women. These 505 patients paid altogether 1888 visits to the hospital, which makes an average of three to four attendances for every individual patient.

A. Pharyngeal Affections.

Disease.	Number of patients.		
	Male.	Female.	Total.
1. Acute pharyngitis	14	22	36
2. „ uvulitis	7	3	10
3. Chronic pharyngitis (including granular form)	13	37	50
4. Herpes of pharynx	2	2	4
5. Acute tonsillitis	42	35	77
6. Chronic tonsillitis and hypertrophy of tonsils	26	29	55
7. Gangrenous (?) tonsillitis	1	—	1
8. Carcinoma of tonsil	1	—	1
9. Benign neoplasms of fauces, tonsils, pharynx	—	1	1
10. Syphilis { <i>a.</i> Congenital	1	—	1
<i>b.</i> Secondary	5	16	21
<i>c.</i> Tertiary	3	8	11
11. Foreign bodies in pharynx	1	2	3
12. Paræsthesia and hyperæsthesia	1	3	4
13. Adenoid vegetations	3	7	10
Total	120	165	285

B. *Laryngeal and Tracheal Affections.*

Disease.	Number of patients.		
	Male.	Female.	Total.
1. Isolated anæmia of larynx	4	12	16
2. Acute laryngitis (including simple catarrh)	14	14	28
3. Œdema of larynx { <i>a.</i> Primary	2	2	4
<i>b.</i> Secondary ¹	(2)	—	— ²
4. Chronic laryngitis	17	6	23
5. Benign neoplasms { <i>a.</i> Papillomata	1	—	1
<i>b.</i> Fibromata	—	1 (P)	1
6. Carcinoma of larynx { <i>a.</i> Per propagationem ³	(1)	—	— ⁴
<i>b.</i> Endolaryngeal	3	—	3
7. Sarcoma of larynx	1	—	1
8. Syphilis of larynx { <i>a.</i> Congenital	3	1	4
<i>b.</i> Secondary	5	3	8
<i>c.</i> Tertiary	7	2	9
9. Traumatic perichondritis	1	—	1
10. Anchylosis of crico-arytenoid { <i>a.</i> Traumatic ⁵	(1)	—	— ⁶
articulation { <i>b.</i> Syphilitic ⁷	(3)	—	— ⁸
11. Phthisis of larynx	12	8	20
12. Erysipelas of larynx	1 (P)	—	1
13. Foreign bodies in larynx	1	—	1
<i>a.</i> Complete, of vagus or recurrens	3	2	5
<i>b.</i> Of abductors	4	2	6
14. Paralysis { <i>c.</i> Of adductors	1	17	18
<i>d.</i> Of internal tensors	1	—	1
<i>e.</i> Of individual nerve-twigs	—	2	2
15. Spasmus glottidis	1	—	1
16. Spasm of tensors (Aphonia spastica)	1	—	1
17. Isolated tertiary syphilis of trachea	—	2	2
Total	90 ⁹	74	157

The total number does not agree with the sum of the two preceding columns, because the last column is intended to give the total number of *individuals* seen, whilst in the two preceding ones several cases, offering important complications are repeatedly referred to under different headings. The table itself gives the explanation of the principle observed.

¹ This is included under tertiary syphilis of larynx, and erysipelas of larynx.

² See 7 c and 12.

³ This is included under carcinoma of tonsil.

⁴ See Table A 8.

⁵ This is included under traumatic perichondritis.

⁶ See 8.

⁷ This is included under tertiary syphilis of larynx.

⁸ See 7 c.

⁹ In reality 83.

c. Nasal Affections.

Disease.	Number of patients.		
	Male.	Female.	Total.
1. Epistaxis	1	1	2
2. Continuous watery secretion from one nostril	—	1	1
3. Chronic rhinitis	1	2	3
4. Ozæna	1	2	3
5. Tertiary syphilis ¹	—	(5) 2	2 ²
6. Mucous polypi	1	3	4
Total	4	14	15

The explanation of the differences between the last and the two preceding columns is the same as that given for the analogous differences in the last table.

d. Œsophageal and Miscellaneous Affections.

Disease.	Number of patients.		
	Male.	Female.	Total.
1. Globus hystericus	—	11	11
2. Spasm of the œsophagus	1	—	1
3. Tertiary syphilis of the œsophagus	—	1	1
4. Carcinoma of the œsophagus	2	—	2
5. Enlarged cervical glands	9	15	24
6. Parenchymatous goitre	—	1	1
7. Exophthalmic goitre	—	1	1
8. Chancre of lip	—	2	2
9. Secondary syphilis of the tongue.	2	3	5
Total	14	34	48

Grand Total.

Disease.	Number of patients.		
	Male.	Female.	Total.
Pharyngeal	120	165	285
Laryngeal	83	74	157
Nasal	4	11	15
Œsophageal and miscellaneous	14	34	48
Grand total	221	284	505

¹ Three of these cases have been counted in the foregoing tables.

² See Table A, 10 c, and Table B, 8 c.

I am perfectly aware that these statistics can claim a very limited value only. To begin with, the total number of cases observed is too small to allow of any general conclusions as to the relative frequency of the individual diseases of the upper air passages, as to the proportions with regard to age, sex, &c. Secondly, in very many instances the affection under which the patient is registered was not the only one from which he suffered (thus, *e.g.* almost all the patients suffering from chronic laryngitis were at the same time ailing from chronic pharyngitis). Now, had I mentioned every complication met with under a separate heading, the tables would have become so involved as to render a general survey almost impossible. I have therefore determined to register every case under the most important of the complications met with, and I have departed from this principle in some very few instances only, in which several equally rare and interesting complications were simultaneously present, the occurrence of which amongst my observations a glance at the tables ought to show.

A third shortcoming—which, however, I believe my tables share with almost all medical statistics—is, that in a good many instances the diagnosis was by no means a certain one, and again, that many patients in whom the diagnosis with regard to certain symptoms had been left open did not come again (in all these cases the patients are entered under headings determined by other positively ascertained symptoms).

Finally, the nomenclature of the tables might be objected to in some instances. I have, *e.g.* summarised *all* the acute inflammatory affections of the pharynx proceeding from mere catarrhal influences under *one* heading, and followed the same principle with regard to the analogous affections of the larynx. My reason for doing this is that, after all, these different affections (“angina faucium,” “acute pharyngeal catarrh,” “acute pharyngitis,” “acute oedematous pharyngitis,” &c.) represent only differences in *degree*, not in *kind*, and that it seemed to me undesirable to introduce too many subdivisions.

Looking back, then, upon the many possible sources of error and inaccuracy, I am certainly far from attaching any considerable value to my statistics. Still I think they are not quite useless, as after all they give a fair idea of the work done in the Throat Department. Moreover, if they are continued, as

I hope they will be, for a number of years, the same conditions being observed which have been the governing ones in this report, I trust that both the comparison of the experience of different years and the aggregation of the whole amount of material collected during a considerable period by the same observer, may ultimately prove of some value in deciding a good many points which are at present matters of controversy.

There are only two points to which I should like at once to draw attention, because they rather differ from the experience of other places. The one is the relative proportion of the sexes among the patients, the other the surprisingly large number of cases of acute and chronic tonsillitis. With regard to the first I would observe, that it is an almost universal experience that the male sex suffers more frequently from diseases of the upper air passages than the female, and the number of male patients is accordingly almost always found to be larger than that of female patients in throat-departments and throat-hospitals. I have no explanation to offer of the difference shown in this respect by my tables. Perhaps the present year may already show a reversal of the figures.—Equally difficult is it to account for the tremendous number of cases (132) of acute and chronic tonsillitis. They formed more than a fourth of all the cases put together which came under observation, a proportion which is larger, so far as I know, than has ever been before recorded, and certainly much larger than that observed by me within the same time at the Throat Hospital. Yet, as will appear from the following tables, no special reason referable either to season or to epidemic influences can be assigned for the large number (77) of cases of acute tonsillitis.

Table of Cases of Acute Tonsillitis.

Month.	AGE.														Total in month.
	MALES.							FEMALES.							
	5-10	-15	-20	-25	-30	-40	-50	5-10	-15	-20	-25	-30	-40	-50	
January	1	1	...	2
February	1	1	1	...	...	...	...	...	...	1	...	...	4
March	2	1	3	...	...	...	...	...	1	...	1	...	1	9
April	1	1	1	2	...	2	...	...	...	2	...	...	...	9
May	2	1	1	...	1	...	...	...	2	...	1	...	3
June	1	...	1	...	1	...	...	...	2	1	1	...	...	7
July	1	...	...	...	...	...	...	...	...	...	1	...	2
August	1	1	...	1	...	1	2	2	...	1	1	...	11
September	3	1	1	...	1	...	...	1	...	1	...	...	7
October . .	1	1	2	1	...	1	...	1	1	2	1	1	...	...	12
November	1	...	...	...	...	...	...	...	1	1	...	...	...	3
December	1	...	...	1	...	...	1	...	3
Total . .	1	6	12	10	5	3	5	2	3	10	7	7	5	1	77
<div style="display: flex; justify-content: space-around; align-items: center;"><div style="text-align: center;"><div style="border-top: 1px solid black; width: 100%;"></div><div>42</div></div><div style="text-align: center;"><div style="border-top: 1px solid black; width: 100%;"></div><div>35</div></div></div> <div style="text-align: center; margin-top: 5px;"><div style="border-top: 1px solid black; width: 100%;"></div><div>77</div></div>															

From this table it is obviously impossible to draw any definite conclusion as to the prevalence of the disease in any individual month or group of months. The influence of age, on the other hand, is well illustrated by the table in spite of the small numbers, the proportions in this respect as well as those regarding the sex of the patients, being very similar to those found by Morell Mackenzie, and other observers.

Concerning chronic tonsillitis and hypertrophy of the tonsils, the only point calling for remark apart from the frequency of the affection as observed amongst my patients (55, or more than 10 per cent. of all the cases) is the prevalence of the disease in the female sex (29 to 26 males). As a rule, a rather considerable preponderance of the male sex has been observed (Mackenzie).

However, concerning all these points, the aggregate experience of several years must show whether these differences are merely accidental or whether they actually point to results with reference to the points touched upon, which differ from those obtained elsewhere.

In concluding this, my first report of the department, the charge of which was confided to me last year, I have the greatest possible pleasure in returning my sincere thanks to my colleagues, all of whom have supported me most kindly by sending me very interesting cases and by allowing me on the other hand, when patients of mine were admitted to the hospital, to retain the charge of them, whilst at the same time giving me the benefit of their advice. I have to thank also my friend Mr. Stewart, for the great kindness and care he has always shown in making numerous microscopical examinations of specimens which I submitted to him, and it gives me great pleasure to thank my former and present clinical clerks for the efficient assistance I have received from them.

CASE
OF
HÆMORRHAGE FROM THE INTERNAL
CAROTID ARTERY

SUBSEQUENT TO
SUPPURATIVE TONSILLITIS.

LIGATURE OF COMMON CAROTID; RECURRENT
HÆMORRHAGE. DEATH.

BY BERNARD PITTS.

JAMES O—, æt. 39, occupation a waiter, was admitted November 18th, 1882, into Arthur Ward under the care of Dr. Payne. Previous history good, but he had had an attack of tonsillitis four months previous to admission. His illness commenced on November 7th with a sorethroat, which increased in severity. He was confined to his bed for one week before admission, and was delirious occasionally during the last two nights.

Condition on admission.—Complaining of pain in the throat and difficulty in swallowing. Both tonsils and uvula swollen and reddened. No ulceration or membrane seen. Tongue moist, thickly coated. Breath foul. Temp. 101.2° . Lungs and heart normal. Urine contained considerable quantity of albumen. Half an hour after admission an abscess (apparently in the right tonsil) burst, and about a teaspoonful of pus tinged with blood escaped.

November 20th.—The throat appeared better, less swollen, and patient expressed himself easier. Temp. 102°; pulse 104. During the preceding afternoon he had been delirious and somewhat excited.

21st.—About 5 a.m. he suddenly felt something, as it were, burst in his throat, and a sharp attack of hæmorrhage occurred. He lost about 16 ounces of bright red blood. No appearance of pus. The patient seemed relieved after this and slept well during the day.

22nd.—A similar hæmorrhage occurred; the patient became very pale and his pulse decidedly weaker. Temp. 99°. Perchloride of iron was applied to both tonsils, and ice to the neck, and a subcutaneous injection of ergotine administered. In the afternoon a small quantity of blood was again lost, which flowed slowly from the mouth. Examination of the throat in each instance failed to detect the exact source of the bleeding.

23rd.—At 4 a.m. I was called to see the case by the house physician. A further large hæmorrhage had taken place, and the man was greatly exhausted and anæmic in appearance. His mouth was full of clot, but on clearing this away no bleeding point in the throat could be detected. There was a considerable brawny swelling of the upper part of the neck, below the ear, on the left side, and the patient had the impression that the bleeding was from that side of the throat. I therefore proceeded to ligature the left common carotid artery. The operation was performed without moving the patient from the bed. During the day he rallied and expressed himself as much more comfortable. Temp. 100°; pulse 100 and weak. No trace of further hæmorrhage.

24th.—At 10.30 a.m., about thirty hours after the operation, he suddenly brought up a very large quantity (22 ounces) of bright red blood, and died five minutes afterwards.

Unfortunately, the friends removed the body before a post mortem could be made. Dr. Coxwell, the house physician, made an examination with me at the patient's house. We found an abscess cavity around the left tonsil, and with a small ulcerated opening into the throat situated immediately behind the tonsil. The cavity extended amongst the deep muscles of the neck for an inch below the styloid process. The inner aspect

of the internal carotid artery was completely exposed in the abscess, and just opposite the tonsil an ulcerated opening in the vessel, nearly as large as the nail of one's little finger was found; a fibrinous clot was lying just outside the opening, and had evidently been temporarily plugging it. The abscess cavity contained recent clot and a little purulent matter. The channel of the internal carotid was free from clot, the clot at the point of ligature extending not quite as high as the bifurcation. No disease was found in the general viscera. The heart and vessels were particularly examined and found healthy.

Remarks.—The two chief points of interest in this case are : 1. The ulceration of vessel secondary to tonsillar abscess. 2. The consideration of the treatment.

The near relation of the internal carotid to the tonsil, and the frequency of abscess in this situation, would appear to favour the possibility of such a complication as hæmorrhage secondary to tonsillitis; fortunately, such a sequence is extremely rare—I believe, in fact, there is no case on record. Several cases have been reported of severe hæmorrhage after ulceration in the throat, due to scarlatina or diphtheria, and occasionally the ligature of the common carotid has been resorted to successfully. It is, however, impossible to say, in the event of recovery, whether the bleeding proceeded from small vessels (branches of the external carotid) or from ulceration of the internal carotid.

There would appear to be no doubt that in the case recorded the abscess was the result of the tonsillitis. The history of the illness, the state on admission, and the previous attack (four months before) all point to tonsillitis as the cause.

Believing that disease of bone is the most frequent cause of abscess opening into large vessels, a most careful examination of the vertebræ and base of the skull was made at the post-mortem and nothing abnormal found. The time that elapsed after ligature before hæmorrhage recurred was thirty hours, this I find corresponds with the interval that has elapsed in several recorded cases of ligature for wound of the internal carotid artery. At the time I operated on this case I believed that the blood must come from the internal carotid artery by a free opening, since the bleeding was so large in quantity and so sudden in its several recurrences. I had not, however, considered the question of treatment or had the advantage of

having read the remarks by Mr. Henry Morris on a case of aneurism of the external carotid, published in the sixty-fourth volume of the 'Medico-Chirurgical Transactions,' where he lays great stress on the importance of the anastomosis by branches of the external carotid, and even throws considerable doubt upon the possibility of the anastomosing flow of blood through the arteries within the skull ever reaching so low down as the origin of the internal carotid in the neck. There can, of course, be no doubt about the propriety of dealing with any case of hæmorrhage from any branches of the external carotid by ligature at the spot (when possible) however difficult and troublesome the operation may be, and failing this, ligating the external carotid trunk in preference to the common carotid. In the majority of cases severe hæmorrhage from this region is traumatic, and a branch of the external carotid or the ascending pharyngeal is likely to be the source, but a large repeated hæmorrhage secondary to abscess, in an ordinary healthy subject, is far more likely to proceed from the internal carotid.

The question now arises whether one should not ligate the common carotid and the external carotid also when the hæmorrhage is in every probability arising from an opening in the internal carotid, and so cut off the supply from these external anastomosing branches. If Mr. Morris's conclusion is correct, such a proceeding would at once cut off the risk of returning hæmorrhage.

The fact that at the post mortem of this patient the internal carotid contained no clot below the opening, would render it probable that a considerable part of the renewed bleeding was conveyed by these branches.

Lately Mr. Reid and myself have made a series of careful injections on the dead subject, with a view of determining, so far as it is possible, the relative quantity of blood and rapidity of flow derived from the extra-cranial and intra-cranial anastomosis. Of course in any such experiments, great allowance must be made for the state of the vessels with regard to the post mortem contents, and the want of all influences, nervous or otherwise, brought to bear upon the vessels during life, and more especially upon the vessels of the brain.

The mode of experiment consisted in placing on one side of

the neck graduated glass tubes of equal calibre in the internal carotid and the common carotid, immediately below its bifurcation, so as not to cut off the supply from the ascending pharyngeal or the superior thyroid. These tubes were carefully secured in position, and great care taken that no vessels were wounded in the operation. Coloured watery fluid was slowly injected into the opposite common carotid artery, and in one case simultaneously into the vertebral of the same side.

In the first three cases the fluid escaped at once freely by the tube giving the supply from the external carotid, and was followed about two seconds afterwards by a stream from the tube in the internal carotid. The amount of blood in both cases, in a given time, was slightly in excess from the tube belonging to the external carotid. Injecting the vertebral made no difference to the flow.

In the next two cases, however, the reverse action occurred, but there was really very little difference in the quantity escaping from the two tubes. In the last case, however, the fluid came almost entirely by the tube in the internal carotid, and it was only after injecting for some considerable time that any appreciable amount passed by the tube in the external. Probably in this case there was some obstruction by clot in the branches of the external carotid, though possibly an entire absence of clot in the internal carotid rendered this channel the readiest means of escape.

We arrived at the conclusion that in the event of an opening in the internal carotid and ligature of the common trunk the blood would find its way through the external carotid of the same side much more speedily and in larger quantity than we believed possible. There can, however, be no question that blood would be supplied to the opening by the vessels at the base of the brain, for it would appear impossible that any influences during life would counteract to any degree the flow through such a direct channel. It may be urged against the practice of ligaturing both the common and external carotids that severe hæmorrhage from the tonsils has been successfully treated by ligature of the common carotid only, but how unlikely it is in such a case that the bleeding came from the internal carotid at all. If the patient has not lost a very large quantity of blood, and there is reasonable doubt as to its

source, then one might ligature the external vessel, reserving the ligature of the common trunk for a last resource in case of further trouble. A remarkable feature in the case I have recorded was the very sudden and large hæmorrhage (22 ounces) that occurred at the fatal relapse.

It is a subject of congratulation that no one was tempted to incise the tonsil before the hæmorrhage occurred, for if a puncture had been made it would have been difficult to persuade his friends, or anyone else, that the bleeding was not traumatic. The reputation of a Liston or a Syme would, indeed, be required under such circumstances to enable one to explain the facts.

Medico-legally, this unfortunate man's case might well be borne in mind.

CLINICAL REMARKS

ON SO-CALLED

“PAINFUL” PARAPLEGIA.

By J. S. BRISTOWE, M.D., F.R.S.

WITHIN the last few months I have seen, in association with two or three medical practitioners of great eminence, a case which has been, and remains, to them as well as to myself deeply and painfully interesting. A gentleman, a little over seventy years of age, who had hitherto enjoyed good health, was, about five months before I saw him, attacked suddenly, while playing at billiards, with a sharp pain in the lower part of the dorsal or upper part of the lumbar region of the spine. The pain, which was paroxysmal, increased in severity and frequency, and latterly became extremely severe and almost unbearable, so that he was compelled to take to his bed. On the occasion of my visit he was probably at his worst; his pains were excruciating, and he could scarcely be prevailed upon to shift his position in bed, or to permit an examination. The pains were described as being momentary, stabbing, or lightning-like, and resembling those of tic; they were induced by any movement, and even by manipulation of the back or upper part of the belly, but often also came on without any obvious cause. They were referred mainly to the region of the lower lumbar vertebræ and right loin, but were apt to shoot in

various directions ; and often these attacks made him cry out. On examination of the spine it appeared to be a little curved, and in the lower part of the dorsal region there was an area of tenderness involving one or two vertebræ. It was thought that these vertebræ were unduly prominent. The abdominal muscles were extremely rigid ; and on deep pressure on the right half of the scrobiculus a severe paroxysm of pain was at once induced. He complained of occasional aching pain along the outer aspect of both thighs, but this, he stated, was of old date. It may be added, that he was quite free from cardiac disease ; that he had never had any recognised renal or urinary trouble ; that he had an old inguinal hernia, and suffered from habitual constipation ; that he had no paralysis, and no tumours to be felt anywhere about his body ; and that he had never had gout or syphilis. He had latterly, however, lost appetite and flesh, and strength.

What was the nature of this gentleman's malady ? Was it renal ? That could hardly be, for the patient had been carefully watched, and no unhealthiness of urine had ever been detected ; he had never had difficulty in passing it, and never any pain specially referred to the bladder, urethra, or testicle. Was it simple but aggravated neuralgia ? The pain was unquestionably neuralgic ; and neuralgic pains of the most intense character, and unconnected with discernible organic disease, are certainly not limited to the trifacial and other sensory nerves distributed to superficial parts. I recollect very well a middle-aged lady who suffered for many months from the most excruciating paroxysmal neuralgic pain, referred variously to the left renal and left ovarian region. She was examined most carefully from time to time by obstetric and other physicians, including myself, without any of us being able to discover the least sign of visceral disease to account for her sufferings. And she was neither hysterical nor gouty. That must have been ten or fifteen years ago at least, and she is now in the best of health. No doubt his symptoms like hers might have been due to simple neuralgia, but it must be admitted, I think, that this view of his case was at least highly improbable. The other alternatives that suggested themselves were caries of the vertebræ, aneurysm, and carcinoma or some other form of morbid growth. It is needless to discuss the relative proba-

bilities of these alternatives. It is sufficient, perhaps, to point out that caries may certainly come on in old age, and that it may be attended with severe pain, but that such excruciating agony as our patient suffered from is a much more frequent consequence of aneurysm or cancer, and that these affections are commoner in advanced life than caries is. I leant to the belief that the patient was suffering from carcinoma (to employ that word in its clinical sense), and anticipated that paraplegic symptoms would ensue.

Three months later I saw him again. I learnt that under the treatment employed, namely, the persistent use of cannabis, his pain had diminished, and at the end of a month had disappeared; that then he had got up, had walked about, and even strolled in his garden; that, probably in consequence of this, pain and weakness in the back had returned, and he had to take to his bed again; and that two or three weeks later symptoms of paraplegia, which rapidly increased, first showed themselves. At my visit I found him apparently much stronger, much plumper, much more cheerful, and altogether much better than when I saw him before. He still, however, had some tenderness in the back, still complained of pain in the upper sacral region, from whence it extended to the hips and to the neighbourhood of the umbilicus, where also there was tenderness on deep pressure. But no abdominal tumour could be felt, and there was no tumour elsewhere. The most important feature of his case now, however, was the presence of paraplegia. He had no voluntary power over his lower limbs, beyond the capacity to move very slightly the toes of his right foot. He complained of a little numbness in his feet, yet he had nowhere any actual absence of sensibility. The muscles were soft and flaccid; there was only a slight trace of plantar reflex; the tendon-reflexes on the left side were wholly absent, and the patellar reflex on the right side was obtainable with difficulty. He had no power over his bowels, and his water had to be drawn off periodically by the catheter.

Was the mystery of this case more easy of solution now than when I first saw it? I will only remark concerning it, that the extreme pain from which the patient had suffered, and the paraplegia characterised by wasting and flabbiness of muscles and disappearance of reflex phenomena, pointed rather to mischief

involving nerves after their emergence from the cord than to disease affecting the cord itself; and, in place of pursuing the discussion of the significance of the phenomena presented by it, proceed to quote a series of cases, which, I conceive, will serve to explain and justify the interpretation I was inclined to put upon the patient's symptoms in the first instance, and in which the onward march of events has hitherto confirmed me.

In the first of the ensuing cases the pain from which the patient suffered about the hips, thighs, and legs, associated as they were not only with loss of power over the lower limbs, but with wasting and flaccidity of muscles and absence of tendon-reflexes, led me to assume from the beginning that the case was one of paraplegia due to malignant disease involving the lumbar vertebræ. This opinion was sustained by the progress of the case; for the enfeeblement and wasting of muscles increased, the tendon-reflexes remained in abeyance, and the electrical reactions of degeneration became developed—phenomena pointing to involvement of the nerve trunks connected with the lower extremities; and finally, shortly before death, symptoms appeared suggestive of malignant disease of the respiratory organs. The post mortem showed malignant disease, mainly about the bodies of the second and third lumbar vertebræ, but distinctly involving the nerves on the right side, and reaching to, though less obviously affecting, those on the left side.

CASE 1. *Malignant disease connected with lumbar vertebræ, and in posterior mediastinum; paraplegia; pulmonary symptoms. Death; autopsy.*—Charles H—, a labourer, æt. 66, was admitted under my care on the 7th October, 1882. He has been a soldier, and had various maladies while abroad. But there is nothing in his former history to throw light on his present illness. This began in June last with pain referred to the right hip, whence before long it extended down the thigh and leg, and in four or five weeks attacked the left hip also. He gradually lost power in the right lower extremity, and has latterly been unable to use it in walking, or even to stand on it. He has retained fair power in the left leg.

On admission he appears to be a man of large frame and healthy aspect, but his limbs, and especially his legs, are small. He complains of aching and burning pains, worse at night,

which shoot at times into both legs. These pains run down the back of each thigh, and along the outer part of each leg to the ankle, and occasionally along the outer side of the foot to the little toe. The pains lately have been more severe on the left than on the right side. The legs feel numb and heavy, more especially the right; and he complains specially of numbness and some soreness over the inner aspect of the right thigh and leg. The muscles of both legs are very small and flabby, and both limbs (the right much more than the left) are weak. No special tenderness over sciatic nerves. The tendon-reflexes are quite absent in both legs. Plantar reflex very slightly marked; cremasteric reflex not obtainable; abdominal reflex present. No further evidence of disease. Urine sp. gr. 1035, containing neither sugar nor albumen.

The pain continued very severe, and could only be rendered bearable by the use of morphia, which was administered periodically by subcutaneous injection.

About a week later it was observed, that he had some difficulty in passing water, that his pain was now limited to the inner part of the right thigh, from the groin to the knee, and that his tongue was fissured. On the 17th the burning pain implicated the inner aspect of both thighs; and on the 21st the pain, which he described as aching, affected the right hip, whence it extended down the inner side of the thigh into the knee.

Thenceforth the patient's pain, which varied in severity and often came on in paroxysms, was referred mainly to the right hip and thigh, and occasionally also to the corresponding side of the scrotum, in which there was (he said) scarcely any sensation. The muscles, especially those of the right lower extremity, became somewhat more flabby and emaciated than they were on admission, and the limb quite incapable of any active movement. The left leg also lost power, but he could always move it pretty freely; there was some numbness in the right leg, but no absolute loss of feeling.

On the 31st Dr. Kilner tested the electrical reactions, and found them as follows:—The muscles of both lower extremities required an extremely powerful induced current to cause any contraction at all. The reactions with the constant current were, in both legs, the reactions of degeneration, but the evidences of degeneration were most marked on the right side.

He complained occasionally of burning pain in the bladder when he wanted to make water, and after he had been in the hospital a fortnight or so the catheter had to be regularly employed. The urine, however, remained healthy to the last.

His case presented no new feature until the 1st of November, when he first spat a little blood. This kind of expectoration continued for a few days, attended with cough, when, on examination of the chest, it was found that the lower half of the left pleura was apparently full of fluid. He had been gradually getting weaker and thinner, and at this time was extremely ill.

The thoracic symptoms continued. Diarrhœa with involuntary escape of motions came on; his temperature rose; his pulse became rapid and very feeble, his respirations frequent and shallow; and he died exhausted on the 7th November.

No abdominal tumour was ever discovered.

Autopsy.—The left pleura contained about two pints of dark turbid fluid, the right a few ounces, and in both cases there were evidences of recent pleurisy. In the posterior mediastinum was a mass of new growth, mainly around the root of the left lung, but encroaching on the posterior part of the pericardium and some of the pulmonary veins. The left lung was congested, and its main bronchus partially obstructed. The middle part of the right lung was in a state of red hepatization. The heart was healthy. The abdominal viscera were all healthy. But behind the peritoneum, and corresponding mainly to the bodies of the second and third lumbar vertebræ, and moulded upon them, was a nodulated tumour. This, though extending to the left, was chiefly developed on the right side of the middle line; and on this side it extensively implicated the psoas magnus muscle, together with the anterior crural, genito-crural, and obturator nerves, and the lumbo-sacral cord. The tumour on the left side reached the nerve trunks, but did not distinctly press upon them.

The brain and cord were fairly healthy.

The muscles of both legs were pale and atrophied.

The tumours appeared to be sarcomatous.

The second case was one, concerning the nature of which, during life, there was scarcely room for difference of opinion. The patient had had his arm amputated at the shoulder-joint

for sarcoma of the humerus, and fourteen months afterwards he was attacked with numbness in his legs followed rapidly by loss of power in them and impairment of control over his rectum and bladder. He suffered also from severe pains about the loins and hip, and down the legs; and the muscles on the whole were flabby. It is interesting, however, that at first in both legs the tendon-reflexes were well-marked, and attacks of stiffness were apt to come on. But as the case progressed the muscles wasted, the tendon-reflex disappeared entirely from the left side, probably also from the right side, and the reactions of degeneration were found to be present. An interesting feature in the case was that, while under treatment, a spontaneous fracture of the left thigh occurred, due to the development of a sarcomatous growth in its substance. At the post-mortem examination a largish growth was found situated over the third, fourth, and fifth lumbar vertebræ, which projected also from the back of the bodies of the vertebræ into the spinal canal, and thus involved not only the cauda equina, but the lumbar nerves after their emergence from the inter-vertebral foramina. A curious fact, revealed by the autopsy, was that the body of the fourth vertebra had (with the exception of a thin horizontal film of bone) wholly disappeared, the space it had occupied having become filled up by sarcoma which had involved or displaced the inter-vertebral cartilages above and below it.

CASE 2. *Amputation of left arm for sarcoma of humerus; secondary sarcoma of lumbar vertebræ, causing paraplegia; and of left thigh bone, permitting of spontaneous fracture, followed by suppuration, &c. Death; autopsy.*—William R—, a gardener, æt. 39, was admitted under my care on the 21st November, 1882. About fourteen months ago his left arm was amputated at the shoulder-joint for a large sarcomatous tumour of the humerus, and he left the hospital after five months well and without sign of secondary growth. He remained well until six weeks ago, when he began to suffer from pain in the hips and thighs. A week ago he complained of numbness in the lower extremities, from the buttocks downwards; also he had pain in the small of the back, and became so weak in the legs as to be unable to walk without assistance. His urine began to escape involuntarily a few days before admission.

He is a pale, spare, unhealthy-looking man. He complains of aching pains in both hips, worse at night. He is unable to stand alone, but can move his legs as he lies in bed. The muscles, with the exception of the extensors of the legs on the thighs, which seem strong, are small and very flabby; occasionally, however, they stiffen. This is especially the case in the right leg, which sometimes trembles. The plantar reflexes are feeble, and the cremasteric and abdominal reflexes absent; the knee-jerk is brisk in both legs, but there is no ankle-clonus. There is some impairment of sensation from the knees downwards. The stools and urine are passed under him, and he does not know when this occurs. No tender spot or tumour can be detected about the pelvis or abdomen, or spine. Thoracic organs healthy. Urine sp. gr. 1032, alkaline, uratic, and slightly albuminous.

There was very little material change in his condition for some weeks after his admission. Many of the symptoms, indeed, were variable within slight limits. The pain was pretty constant, and generally worse at night, and was often so severe as to prevent him from sleeping, unless relieved by morphia injections. It was generally in the hips, at first mainly in the right, subsequently mainly in the left, and at times it extended to the sacrum or to the knees and feet, or affected the front of the thighs. The paralysis on the whole increased, and the muscles were for the most part flabby and seemed to get smaller. He lost power almost absolutely over the feet, which latterly hung down powerless as he lay in bed. The patellar tendon-reflex became lost in the course of three or four weeks in the left leg, but still remained fairly well-pronounced in the right. This leg also was still stiff at times. Sensation varied in the lower part of the legs, but never wholly disappeared. His voluntary relation to the evacuation of his bladder and bowels also varied. At times he could exercise a little control, at times (when he had no such power) he knew that the urine or stools were about to escape, and at times (as at first) he had no knowledge of the action of his emunctories. The urine was for the most part alkaline and of high specific gravity, and sometimes contained a little albumen. On two or three occasions he suffered from diarrhœa, which had to be restrained by astringent medicines or morphia suppositories. Temperature

normal. Appetite fair. He slept well, as a rule, under the influence of morphia. He got weaker, no doubt, but this change was scarcely appreciable from day to day or even from week to week. Late in January Dr. Kilner tested the electrical condition of his legs carefully, and found that on both sides the thigh muscles required a much stronger induced current than healthy muscles to make them contract, and that a much feebler constant current than in health caused contraction, the relative influence of making and breaking circuit being reversed. The reactions of degeneration were most marked on the left side.

On the 29th January the patient was turning himself in bed by means of a pulley when he felt a crack in his left thigh. This was found to be due to a sudden fracture of the shaft of the femur a little above the middle. There had been no previous symptoms pointing to disease of this bone.

From this time forward he was very ill. He suffered not only from his old pain in the right hip and down the right leg, but from pain referable to the fractured thigh. This became inflamed, and a swelling formed in its upper half, which after a while fluctuated, and at the end of about a fortnight was found to be resonant on percussion. On opening it fetid gas and thick offensive pus escaped. A bed sore had been forming on the buttock for some time, and when the abscess was opened had become very extensive and deep. It was supposed that the decomposition of the fluid in the femoral abscess might have been due to some kind of connection between it and the bed sore. Some gangrenous patches appeared about this time on the toes of the left foot, and gradually increased in size. He also began to suffer from cough, with sanguinolent expectoration. All the above symptoms continued, associated with rapidly increasing feebleness, a temperature which was very variable (for the most part ranging between 100° and 103°, but occasionally sinking to 95° or rising to 105° and upwards), and occasional rigors. He died on the 26th February.

Post-mortem examination.—The abdominal viscera were generally healthy. Over the third, fourth, and fifth lumbar vertebræ was situated a tumour, moulded to their surface, rounded in outline, measuring about 3 inches transversely by

2½ inches vertically, and about ¾ of an inch in thickness. It extended a little more to the left than to the right, and was divided into two lateral lobes by the aorta and vena cava, which lay in a groove upon its anterior surface, and bifurcated just above its lower border. The nerves of the lumbar plexus on the right side were in close relation with the edge of the tumour, but not distinctly pressed on by it; on the left side, however, were evidently involved to some degree in it, and compressed by it. On opening the spinal canal an irregular growth was found springing from the situation of the body of the fourth vertebra, filling up the anterior half or more of the canal, and compressing the cauda equina. On making an antero-posterior vertical section of the vertebræ it was found that the growth on their anterior aspect was continuous with a similar growth, which extended through the vertebral column, and thus became directly continuous with that encroaching on the spinal canal. The condition of things as regards the vertebræ was peculiar. The body of the fourth had almost entirely disappeared, being indicated only by an indistinct horizontal plate of bone, less than a line thick, which separated the intervertebral cartilages above and below it. These were together about 1½ inch thick, and although presenting many of the characters of intervertebral cartilage were clearly infiltrated with adventitious growth. The arches and processes of the fourth vertebra remained unaffected. There was no angular curvature. The tumour was a small round-celled sarcoma.

The third case, also, was one of well-marked paraplegia, accompanied by very severe pain in the lower part of the back, and the presence of a growth (which was easily recognised) in the venter of the left ilium, on which side the paraplegia was most marked. Here the tumour appeared to have originated in the periosteum of the ilium, both beneath the iliacus and beneath the glutei, and to have extended upwards in front of the lumbar vertebræ, and backwards into the concavity of the sacrum. There were many secondary growths in distant regions. The morbid anatomy of the case, however (which was very interesting), is in some respects given in fuller detail in the eleventh volume of the ‘Pathological Transactions,’ p. 125.

CASE 3. *Sarcoma of periosteum of os innominatum, with secondary growths in liver, kidneys, lungs, and elsewhere; paraplegia. Death; autopsy.*—Maria C—, æt. 16, was admitted under my care on September 29th, 1859. She had had good health until three months before coming into the hospital. She then began to fail, but only became seriously ill a month since. She then first complained of pains in the lower part of the back, which soon became constant and severe. About the same time she noticed swelling and tenderness about the left hip-joint; and shortly afterwards her legs became weak and their sensibility impaired.

On admission she was in a febrile condition, with rapid pulse, furred tongue, and constipated bowels. There was imperfect paraplegia, with some loss of sensation, especially marked on the left side, and a tumour on the same side connected with the ilium, and supposed to be a periosteal growth. The paraplegic symptoms increased upon her slowly after admission, and the catheter had to be employed; the tumour, also, of the ilium grew larger. She gradually sank, bedsores formed, the feet became œdematous, and she died worn out on the 18th December.

Post-mortem examination.—The whole of the left iliac fossa, except its anterior superior corner, was occupied by a large rounded growth, which protruded and involved the iliacus internus muscle, and, projecting from below its lower margin, extended into the concavity of the sacrum, forming there two or three rounded masses. It extended also backwards and upwards over the anterior surface and sides of the lumbar vertebræ. A similar and nearly equally large mass occupied the posterior two thirds of the outer surface of the ilium, protruding and involving the glutei muscles. The inner and outer masses did not appear to be continuous either through any of the notches or over the crest of the ilium. They had both originated apparently in the periosteum, and had encroached on the bony tissue, which was consequently very thin and fragile. The inner and outer tumours were together nearly as large as a good-sized cocoa-nut.

Numerous secondary growths were present in the liver, kidneys, retro-peritoneal glands, lungs, and mediastinum, and the mucous membrane of the bladder was much inflamed. The

growth had the characters of what is now known as round-celled sarcoma.

The case last cited stands, both clinically and from its morbid anatomy, midway between the two cases that precede it and the two that follow; for while, as in the former, there was paralysis of both legs and a growth spreading over the surface of the vertebræ and so implicating the lumbar plexus, there was also, as in the latter, a tumour springing from the periosteum of one ileum, which was probably the primary and most important lesion, as it was certainly the most prominent feature of the case during life.

In the first of the two ensuing cases the patient was attacked with pain in one buttock and along the outer side of the corresponding thigh, which might have, and I believe had, been mistaken for sciatica. But rapid loss of power and wasting of the buttock and limb ensued, and before long a lump (the nature of which was not clear) was recognised apparently springing from the bone at the back of the hip-joint. This was the earliest proof of the growth of a sarcomatous tumour, which, by involving the great sciatic nerve, had caused paralysis and wasting in the lower extremity, and which, before the patient's death, had attained enormous dimensions, growing not merely outwards but also inwards into the cavity of the pelvis, and displacing and incommoding the rectum and bladder. A secondary growth occurred in the lower part of the posterior mediastinum.

In the remaining case no special note was made of the presence of paralysis. But the patient, having been ailing for some months, was admitted with a tumour deep seated in the right groin. This was attended with congestion and œdema of the tissues around, and for some time was supposed to be an abscess; but it turned out to be a new growth (probably sarcomatous), taking its origin from the periosteum in the venter of the ileum, and in the progress of its development extending down into the pelvis and under Poupart's ligament into the thigh. The case is interesting in many respects, but it has a special interest here, because, excepting for the absence of any remark as to paralysis (probably due to the fact that the

patient was bedridden long before her death), it is almost an exact counterpart of the one immediately preceding it.

CASE 4. *Sarcomatous tumour of periosteum of ileum and ischium, with paralysis and wasting of leg; secondary growths in lungs. Death; autopsy.*—Charles J. L—, a carpenter, æt. 45, was admitted under my care on the 21st March, 1873.

His illness commenced in September of last year with "rheumatic" pains in the outer side of the right thigh and in the corresponding buttock. The pains increased, the limb became weak, and he limped in his walk, but he continued at work until the end of the month. In October he stumbled while walking, and ricked his hip, from which time the pains became much more severe. At the end of December he was compelled to lie up; and was under medical treatment at home for six weeks. Subsequently he was in a hospital for five weeks, during which time the pains steadily increased, and the limb steadily wasted and lost power.

On admission the patient was suffering from pain about the right ankle and knee, but chiefly in the hip, buttock, along the outer side of the thigh, in the groin and left testicle. The muscles of the limb were wasted and weak, and the buttock was flattened. On careful examination a hard, rounded lump, apparently of the size of half a walnut, was found deep in the buttock and apparently springing from the back of the acetabulum or its immediate vicinity. It was not particularly tender on pressure. The hip-joint itself seemed healthy. There was no fracture or dislocation. The patient seemed fairly healthy in other respects.

A week or two after admission Mr. Simon saw the patient with me, and passed a bistoury into the lump, but no fluid escaped. At the end of another week or ten days Mr. Simon again examined the patient with me. By this time the lump had increased notably in size, and a rectal examination showed that it projected inwards as well as outwards, and caused obvious displacement of the bowel.

On the 19th April the following note was taken:—The pain has increased greatly since admission, and the only relief the patient obtains is from the subcutaneous injection of morphia. The tumour in the buttock, which is irregular and nodulated,

and extremely tender, has, roughly speaking, the size and shape of a penny bun. There are in both groins several somewhat enlarged and very hard glands. The left leg is much wasted.

The progress of the case henceforth was very rapid. The tumour grew daily, remaining hard but becoming irregular, seeming gradually to involve the whole of the ischium, and not only enlarging outwards but extending into the cavity of the pelvis, displacing the rectum and bladder, and interfering materially with micturition and defæcation. Ultimately its bulk was perhaps equal to that of the head of an adult. The glands in the groins, and more especially those on the right side, progressively enlarged, but remained hard. The left lower extremity became extremely emaciated, and altogether powerless, but latterly flexed at the hip- and knee-joints. About the end of June it became also numb, and shortly before death œdematous. The right lower extremity never shared in the paralysis of its fellow; but a week or two before the other began to swell this became exceedingly œdematous and hard. He had no cough or difficulty of breathing; but a few days before his death he complained of pain in the left side of the chest; and, on the morning of the day on which he died, examination of the anterior aspect of the chest revealed some dulness with coarse crepitation at the left apex, with pneumonic consolidation of the base, and a little creaking at the right apex and along the right side of the pericardium. The back could not be examined. Heart healthy. The pain during his stay in the hospital was kept in abeyance by injections of morphia, of which, latterly, ten grains were employed daily. He became exceedingly thin, weak, and anæmic, and, though he remained sensible, very irritable.

He died of exhaustion on the 30th July.

Autopsy.—Body thin. A large tumour projecting in right gluteal region, also felt through abdominal walls in pelvis. It was quite a foot in its largest diameter.

On opening the abdomen a rounded mass appeared rising out of the pelvis, and attached to the periosteum of the iliac bone. It was continuous below with the gluteal tumour, which was also attached to the ilium; but the brim of the pelvis formed a line of demarcation between their projecting portions. The

growth extended from within through the sciatic notch, where it closely surrounded the great sciatic nerve and the gluteal vessels, and thus became continuous with the portion of growth attached to the ilium and ischium beneath the gluteal muscles. The tumour sprung from the periosteum, but did not involve the subjacent bone, or the muscles which were stretched over it. Hip-joint natural. Rectum and bladder displaced by the tumour, but not involved in it.

A secondary growth was found, apparently in the lumbar glands, just below the diaphragm, and extending thence into the lower part of the posterior mediastinum, where it became connected with a mass in the base of the right lung. Both lungs were studded with soft white rounded growths, from the size of a walnut downwards; of which those abutting on the surface were umbilicated. The lungs in other respects were healthy. The right pleura presented old adhesions. Pericardium and heart healthy. Abdominal organs generally healthy. With the exception of the mass referred to above, there was no involvement of either the lumbar or the mesenteric glands.

The tumours were tough, free from juice, and in some parts presented a fibrous or irregularly reticulated character. They had the microscopic characters of spindle-celled sarcoma.

CASE 5. *Growth, probably sarcomatous, of venter of right ilium. Death; autopsy.*—Elizabeth C—, æt. 17, a laundress, was admitted under my care January 28th, 1862. She has not been regular for seven months, and has been otherwise a little out of health. During the last three weeks she has had some pain in her knees and in the cardiac region, and during the last two weeks a slight cough without expectoration. Her appetite has been good, her bowels regular.

Her appetite is now good, her tongue clean. She has a slight cough, and some thoracic pain; but the chest is resonant, and the breath-sounds healthy. There is a loud systolic murmur at the apex of the heart. The pulse is 120 and regular. The pains in her limbs have disappeared. She looks weak and anæmic.

About a fortnight after admission she mentioned for the first time that she had a lump in the right groin, that it had been forming there for six months, but had never been tender or

given her any discomfort. On examining the groin a convex lump (roughly speaking, about as large as a duck's egg) was discovered at its outer extremity, situated above Poupart's ligament, beneath the abdominal parietes, and adjoining the anterior spines of the ilium. It was immovable and hard, though somewhat yielding and elastic. It was not at all tender. The integuments and cellular tissue of the thigh, over a limited area immediately below the tumour, were hardened, congested, and tender.

Up to this time there had been little appreciable change in her general health; her slight cough continued, and a little rhonchus was audible.

On the 26th February the following note was taken:—"Cough about the same; looks very anæmic and ill. The lump above Poupart's ligament has extended towards the pubes, has become more superficial, and now distinctly fluctuates. The upper half of the thigh (in front and to the outside) is congested and brawny, and its integuments are coarse and peeling. There is less tenderness than there was." I believed at this time that an abscess was forming, and in this belief I was supported by my surgical colleague. The chest was resonant, and the cardiac murmur persistent.

At the beginning of March (for about a week) she suffered from diarrhœa.

On the 8th March it was remarked that "the abscess" was getting more superficial and tender, and that there was some tension and congestion of the integuments of the inguinal region, as well as of those of the thigh; that her appetite was worse; that she was thirsty, and her tongue red and fissured; that her cough was more troublesome, and attended with scanty muco-purulent expectoration; that she slept badly; that her pulse was 120; that she was very weak and anæmic; but that still (beyond the presence of a little scattered rhonchus and subcrepitation) there were no local indications of lung disease.

On this day a deep puncture was made into the tumour, but a little blood only escaped.

About this time she took cold, and suffered for a few days from loss of voice and sore throat.

From this date up to the time of her death there was but little change in her general symptoms, beyond the facts that

she grew weaker and thinner; that her pulse increased in rapidity (varying latterly between 136 and 148); that her breath became very short and rapid (without, however, any increase of cough or expectoration, or clear evidence of structural disease in the lungs); that latterly her tongue became dry; and that on the 26th March a sudden discharge, which stained and stiffened her linen, took place from the vagina, and continued thenceforth. The cardiac murmur never disappeared.

The tumour gradually increased in prominence and extent, and to a certain degree the congestion and thickening of the surrounding integuments also increased, the integuments of the right buttock becoming involved.

On the 5th April a probe was passed to a depth of an inch or two into the substance of the tumour through the incision that had been made a month previously. Its tissue was found soft and lacerable, and still nothing but a few drops of blood escaped.

By the 9th a soft, pulpy, tuberculated excrescence, about the size of a nut, had protruded from the seat of puncture. This fungus gradually increased in size, and the integuments over the more prominent parts of the tumour got congested, and evidently incorporated into it; and during the last two or three weeks of her life fungating masses began to protrude here and there from the surface.

She died on the 16th May.

Autopsy.—There was a little serous effusion into the pleuræ, and the lungs were collapsed, otherwise the thoracic organs were healthy. The abdominal viscera were generally healthy; but the liver was fatty, the spleen was large, and the pelvis contained much turbid yellowish fluid. A very large mass of rather hard, brain-like growth was found occupying the right side of the pelvis, reaching up into the abdomen and down into the thigh, pretty separable everywhere from the surrounding parts, but appearing to spring from the periosteum of the venter of the ilium. Its deep attachments corresponded very much to those of the psoas and iliacus, which were spread over it and atrophied. On separating the growth from the subjacent bone this was found denuded and roughened, especially in the neighbourhood of the ilio-pectineal line. It formed a fungating

sore, projecting just above Poupart's ligament. The pelvic organs were healthy, and there was no secondary involvement of lymphatic glands.

In conclusion, I may say that the case which with I commenced this paper is still incomplete, and its pathology therefore still undetermined.¹ But the cases I have cited throw, I fear, a lurid light upon it. I may be permitted to hope, however, that my diagnosis is wrong. For, apart even from the wish, that every true physician feels that he may be able to assist in restoring the apparently hopeless sufferer safe and sound to the arms of those that love him, every scientific-minded physician is only too pleased to have his diagnosis falsified, if by such falsification he advances medical knowledge or even merely corrects his own misconceptions. It is rather by our failures than by our successes that we learn.

¹ Since the above paper was placed in the hands of the printer, the patient here spoken of has died; and it has been proved that his symptoms were due to a hard sarcomatous or cancerous growth involving the two or three dorsal vertebræ, which had been found tender and prominent.

A CASE
OF
SPONTANEOUS GANGRENE OF TOES IN
A CHILD.

WITH
SOME REMARKS ON ITS NATURE AND ITS RESEMBLANCE
TO THE SYMMETRICAL GANGRENE OF RAYNAUD.

By G. H. MAKINS,
RESIDENT ASSISTANT SURGEON.

I am indebted to Mr. Mason for permission to make use of the case recorded below, and to Mr. Anderson for allowing me to add some short notes of a second case occurring among his out-patients.

D. A—, æt. 14, female, admitted into the hospital on February 14th, and discharged on May 18th, 1883.

Family history.—Father alive and healthy. Mother, who suffered with progressive muscular atrophy, died six months after birth of patient. No history of syphilis to be obtained in either parent, and no signs of constitutional syphilis are to be detected in the father at present. This child is the youngest of a family of eight, three only of whom now survive; the first two children of the marriage were carried till full time, but were stillborn; the third, a female, died at six months, and the fourth, a male, at eleven months, they are said, "to have become swollen and to have had erysipelas and died," but no exact information on this subject could be obtained. The fifth

child lived seventeen days only, and died with convulsions. The sixth child has always been healthy, and is now nine and a half years old. The seventh child, seven and a half years old, forms the subject of the second case related below. The eighth child, D. A—, is now three years old; she is said to have been well developed at birth, but in consequence of the death of her mother had to be put out to nurse; during this period she became emaciated, and suffered with an eruption on the scalp, face, and nates; no snuffles were noticed. She was taken home, rapidly regained flesh, lost the eruption, of which no scars now remain, and has kept in good health until three months ago, the end of November last, when, according to the account of her step-mother, she is said to have got "chilblains." These "chilblains" first appeared on the middle of the dorsum of the toes as small dark patches, upon which blebs were developed, and these breaking shallow ulcers were left. Later, similar sores were developed at the clefts between the toes. Meanwhile the toes, which had been painful and tender, assumed a dark purple colour, and the tips of three finally became black and gangrenous.

On admission.—Child well nourished, and does not look greatly out of health; very peevish and fretful in temper, said by her stepmother to have become more so since commencement of present illness. A number of small tumours of molluscum contagiosum scattered over right eyelid, forehead, and root of nose. The gangrene is wholly limited to the feet, which present the following appearances:

Right foot.—All the toes are of a deep-blue congested colour, feel cold, and are very tender, the tips of the middle three toes are black and gangrenous; the gangrene involves the whole thickness of the pulp of the toes, extending on the dorsum as far back as the middle of the last phalangeal joint, and on the sole to the first fold, the loss of substance of the fourth toe being rather greater than in the others. A well-marked line of demarcation has already developed. The gangrene is of the dry variety, but there is a considerable amount of discharge from the granulations. In addition to this condition of toes, there are several gangrenous spots on the dorsum of the foot; they average about one third of an inch in diameter, are irregularly circular in shape, and exist in the following situations:

—One about one inch from the base of the first inter-digital cleft, black, with the remains of a dried bleb upon it, the slough still adherent throughout. The second, over the bases of the fourth and fifth metatarsal bones, a punched-out ulcer involving the whole thickness of skin, the edges unthickened, and the base inactive and sloughy looking. On the sole two spots, about the same size and shape as those on dorsum, one on the ball of the great toe the other on the point of the heel; the blebs have ruptured on both, but there is no further loss of substance.

Left foot.—The terminations of all the toes are intact, but the same dark-blue discoloration, tenderness, and coldness to the touch exist. Dorsum: a circular spot on outer border of dorsum of fifth toe over last phalangeal joint; similar circular spots with black sloughs still adherent at bases of first, second, and fourth inter-digital clefts. Sole: two similar sores, one at base of third toe and second about one inch behind; immediately behind fourth cleft is a bleb with a black base but greenish, transparent contents; and on the under surface of the heel is a circular black spot, resembling a limited extravasation of bloody serum, between cutis and epidermis.

The posterior tibial arteries and the dorsal arteries beat in both legs and feet fully as strongly as natural. Heart normal. Urine only to be obtained in small quantities, as she passes it in bed, but on examination found to contain neither albumen nor sugar. Feet dressed with carbolised oil and wrapped in cotton wool.

February 18th.—General condition improving, purple coloration of toes much less marked, tenderness decreased, and patient is not so pettish. Separation of sloughs continues, no fresh spots.

24th.—Improvement continuous. Toes now normal in colour, and the child complains very little.

Right foot.—Dorsum: slough on sore at root of great toe still adherent, sore at the base of the fifth metatarsal space healing rapidly. Sole: the thin black sloughs on the sores on the ball of great toe and heel have separated, leaving a pink shining cicatrix; the sloughs penetrated only about half the thickness of true skin, but a pinhole opening extends through the whole thickness in the centre of the spot on the ball.

Left foot.—Dorsum: sloughs still adherent. Sole: two sores healed, shining pink cicatrices remain, these also only extended about half through true skin. A granulating sore at base of third toe. Black spot on heel remains as on admission.

March 8th.—Sloughs still adherent to ends of toes, but all the sores originating in gangrenous spots are firmly healed. The only spot remaining unchanged is the black one on under surface of left heel. General health fair, appetite good, bowels somewhat loose.

12th.—Ailing, appetite not so good, bowels loose, patch of pustular eczema below left lower eyelid. Temp. 98·4°.

14th.—Conjunctivitis from entrance of pus from eczematous eyelid into left eye.

19th.—General condition much improved. Sloughs have separated from tips of right toes, the greater part of the second and third, and the whole of the fourth ungual phalanges together with the nails are gone. Sores rapidly granulating up. Left foot entirely healed, slough of epidermis over black spot on heel separating.

26th.—Both feet entirely healed. The patient remained in the hospital until May 18th chiefly on account of the left eye, the conjunctivitis proving obstinate, and being complicated with a phlyctenular ulcer of cornea. I saw her again on the 3rd of July, she had remained perfectly well, and the cicatrices on the feet looked sound and healthy.

Case 2. W. A—, æt. 7, male, elder brother of D. A—. Seen on February 20th, 1883. Always good health until present illness, no signs of congenital syphilis. Feet and hands have not been noticed to get cold or die.

Twelve days ago complained of pain and swelling of his feet, his mother put them into a warm bath, and on removing them noticed a number of dark spots on the dorsum and sole. Since then he has been kept quiet in bed with the feet warm, and the condition has improved except in the case of the little toe which he has pulled about.

February 20th, 1883.—The boy complains of pains in his feet; toes are blue and congested, the coloration extending on to dorsum of feet.

Right foot.—Dorsum free. Over back of heel two circular spots which meet and another just below tip of internal malleolus. Sole: two spots beneath heel.

Left foot.—Dorsum: three patches extending along outer border of foot, between cuboid bone and base of little toe, a fourth on outer side of dorsum of little toe, this latter already ulcerating from patient having scratched it.

The general appearance of these patches was very uniform, they averaged about one third of an inch in diameter, were irregularly circular in outline, were not raised, and presented a grayish-green gangrenous colour.

Hands.—At base of nails of right, middle, and left ring fingers small bullæ have risen and burst, leaving a reddened area only. On apex of left thumb a small bleb extending beneath the nail has risen and desiccated, only some branny desquamation now remains.

I had no opportunity of seeing this patient again until July 3rd, all the spots were then firmly healed, the only sign of them remaining in ill-marked pink cicatrices, the process having apparently in no case extended entirely through the skin. The stepmother said they had undergone the same changes as those seen in the similar spots on D. A—'s feet, the whole process having lasted about four months. The blebs at the bases of the nails of the fingers rose several times, this ending in the loss of the nails, which were, however, perfectly well redeveloped when I saw the patient.

He presented no signs of any organic disease of heart or vessels. The urine was normal, and there was no history of feeding on rye bread.

In attempting to determine the nature of the gangrene in the case first detailed, and in the consideration of the relation borne to it by the phenomena witnessed in the second, we are met by several difficulties besides the elimination of the ordinary causes of gangrene. The most marked of these difficulties is the strong suspicion existing that the children were the offspring of syphilitic parents, and allowing this to be the case, or at any rate probable, it becomes necessary to examine closely the symptoms in order to determine whether they were such as to be possibly the result of syphilitic disease. Other causes of

possible error are the disease described by Dr. Whitney Stokes¹ as pemphigus gangrenosus, recently classed by Mr. Hutchinson² under the name of varicella gangrenosa, and the ordinary broken chilblain.

It will be most convenient then to rapidly eliminate the ordinary causes of gangrene as absent in these cases, then briefly to review them in their diagnostic relations as stated above, and lastly, to note the resemblance between the phenomena here witnessed with those described by Raynand, with the reasons for regarding the cases as examples of symmetrical gangrene.

First, then, as to the condition of the heart and vessels, repeated examinations failed to reveal anything abnormal in either, which would seem to justify the exclusion of deficient cardiac power, or arterial obstruction as causes. Next, the normal condition of the urine removes diabetes or albuminuria from the field; and the assertion of the parents that the children were fed upon white bread only, disposes of the possibility of the gangrene being the form which accompanies ergotism, and which would most nearly resemble the case under observation.

Then, as to the question of syphilis, as is shown in the detailed history, the principal evidence of this lies in the large infant mortality, this decreasing with the later pregnancies. Unfortunately no details concerning the still-born or deceased infants could be obtained, so that we are compelled to rest contented with the supposition, unstrengthened even, by any evidence of the disease in the surviving parent.

The point in the local symptoms of D. A— most resembling syphilis was the presence of sores in the interdigital clefts, the origin of these, however, in gangrenous spots with the separation of a definite black slough sufficiently well defines them from the fissures originating in a species of mucous patch occurring in syphilitic onychia. Then, as to the sores upon the dorsum and soles of the feet, the usual formation of such ulcers would be subsequent to the previous deposition of cutaneous or subcutaneous gummatous infiltration; such a process could not account for the sores seen in our cases, which appeared as the result of an acute sloughing of apparently previous healthy

¹ 'Dublin Medical and Physical Essays,' 1807.

² 'Med.-Chir. Trans.,' vol. xxvii, 1882, p. 4.

skin. The ulcers, moreover, when formed were remarkable for the absence of any indurated or inflammatory surrounding area, being merely gaps left as the result of simple death of a small area of skin (the whole thickness in some cases not being involved), in no case showing any tendency to spread although no anti-syphilitic remedies were employed. Syphilitic pemphigus could, I think, hardly be brought into question, the ages of the patients, the general condition, and the absence of any attendant signs of constitutional syphilis which so invariably accompany it, seem amply sufficient to negative the suggestion.

The only remaining supposition, the possibility of the sloughs resulting from the obstruction of the small vessels over limited areas by a process of syphilitic endo-arteritis, can in the absence of any exact knowledge of the formation of specific ulcers in this manner scarcely be advanced or negated.

Next, as to the resemblance of the symptoms to those of pemphigus gangrenosus, with the exception of the formation of bullæ in both cases with subsequent gangrene of skin, the danger of confusion seems small. In this disease the bullæ especially occur behind the ear, in the flexures, the palms and soles, and, more rarely, on the trunk and in the axillæ; they may be the origin of spreading gangrene in the flexures, and the local symptoms are often attended by high fever and constitutional disturbance. In our cases the gangrene was confined to the spots beneath the bullæ, and in no case spread from them, for they remained the same size throughout, and the whole process was unaccompanied by rise of temperature or constitutional disturbance. In none of the descriptions of pemphigus gangrenosus is loss of the tips of the extremities mentioned.

Lastly, as to the elimination of ordinary chilblains, the cases no doubt occurred in the cold season, but neither of the children were subject to the complaint. As further evidence against it may be mentioned, the limitation of the process to the feet in the younger child, together with the extent of the gangrene, which would have been incongruous in anything less than actual frostbite; the absence of irritation previous to the formation of the sloughs, and their sudden appearance heralded only by great pain in the case of the boy.

Before proceeding to enumerate the points on which stress is laid in placing this case under the head of symmetrical gangrene it will be convenient to state here the nature of the disease as described by Raynaud.¹ He defines it as a variety of dry gangrene, characterised by the double fact that it is independent of any organic change in the vascular system, and always affects similar parts—the two upper or lower extremities or sometimes the four at once, more rarely the ears or nose. It has also been noticed on the nates and cheeks. As to the nature of the gangrene, he considers that its occurrence may be explained on the theory of a persistent vascular spasm commencing in the capillaries and extending to the larger vessels. The most simple cases are those in which the spasm is not prolonged enough to cause any ill effects, producing the phenomena known popularly as “dead finger.” This he speaks of as “syncope locale.” In the next degree the initial period of spasm is followed by one of incomplete reaction, the veins returning more quickly to their normal state from their comparative paucity in muscular elements, then from the absence of *vis-a-tergo* they become loaded from reflux, and the part gains the blue congested appearance which gives the name “l’asphyxie locale.” Lastly, in cases where the angio spasm leading to the “syncope locale” is intense and of long duration it may be rapidly followed by “l’asphyxie locale,” the congestion being accompanied by the escape of blood elements from the veinules and gangrene. According to Raynaud this sequence invariably occurs, but it is not always observed, as for instance in our cases, and on the strength of this a recent writer, M. Weiss, denies the necessity of arterial spasm, stating that the process may commence and remain confined to the veins, a loss of tone in these leading primarily to “l’asphyxie locale.” He supports this argument by a case, and also by experiment.² The origin of these vascular phenomena is ascribed by Raynaud to changes in the vaso-motor

¹ ‘De l’asphyxie locale et de la gangrène symétrique des extrémités,’ Paris, 1862; ‘Archives Gen. de Médecine,’ 1874, ser. vi, tome 23; ‘Nouv. Dict. de Méd. et de Chir.,’ tome 15, p. 636.

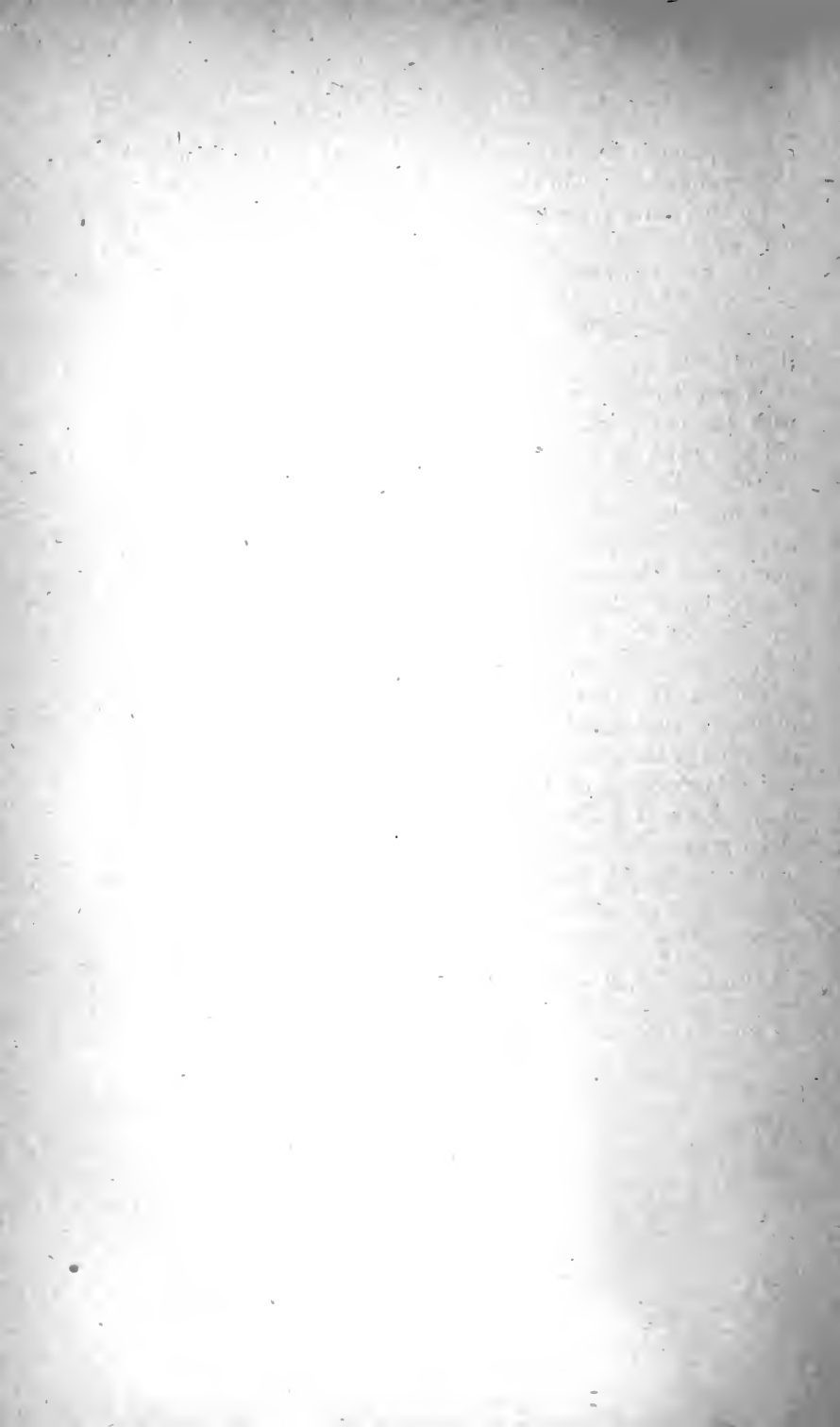
² M. Weiss, “Ueber Venenspasmus,” ‘Wiener Med. Presse,’ 1882, No. 31, and M. Weiss, ‘Ueber Symmetrische Gangrän Wiener Klinik,’ Heft x and xi, Nov., 1882.

centres, and it is by this central character of the lesion that he attempts to explain the symmetry observed.

Finally, with regard to the resemblance between the cases detailed above and those observed by Raynaud and others, in neither could any definite exciting cause be assigned, certainly no exposure to excessive cold ; in this respect the cases resemble the majority described, while as to sex, one case was in a male the other in a female, the female sex being usually looked upon as a predisposing element. Attendant nervous phenomena, with the exception of an exceedingly irritable temperament, did not exist in either, the special point of interest in this particular being the fact of the mother suffering with progressive muscular atrophy. In neither case did the intermittent hæmaturia described by Dr. Southey¹ occur. Then, as to the phenomena observed in the feet, these tally exactly with the description of other observers, every degree, from the superficial gangrene of skin to the loss of the whole thickness of a digit, having been observed. The only other point that might be raised, viz. the want of symmetry in the loss of the ends of the digits, is sufficiently answered in the words of the original describer of the affection ;² he says, "As to the word symmetry, which I have made use of in describing this remarkable affection, it must be well understood that I never used the word in its strict geometrical sense ;" and I think that the occurrence in, and limitation of, the process to the feet sufficiently justifies the use of the term in our cases although the actual loss of substance was not geometrically alike in both extremities.

¹ 'Bartholomew's Hosp. Reports,' vol. xvi, 1880, p. 16 ; 'Lancet,' vol. i, 1883, No. xviii, p. 777.

² Raynaud, 'Nouv. Dict. de Med.,' tome 15, p. 637.



ON THE TREATMENT
OF
HYDATID TUMOURS OF THE LIVER.

By JOHN HARLEY, M.D.

SINCE publishing my last paper on this subject in the 'St. Thomas's Hospital Reports,'¹ only four cases of the disease have come under my care in the hospital. One, the subject of the present remarks; a second, was that of a woman in advanced life, who was admitted jaundiced and moribund into Christian Ward, with what from a superficial view (for she was too near death to allow of my making an examination) appeared to be ascites from malignant disease of the liver. The other two were cases in which the late Dr. Murchison had used simple puncture, one of these was in an extremely urgent condition from extension of the disease, and I transferred him at once to his care. As I am away from the hospital records, I cannot say what was the further progress of this case. The other case, in which eleven ounces of clear fluid were removed by the aspirator, continues under my care, and will probably require operative treatment at some future time.

The case narrated below serves very well to illustrate the treatment of these cases, which I have on former occasions advocated, namely, the establishment of a free opening into the cyst, whether suppuration has occurred or not; the complete evacuation of its contents; and the radical cure of the disease by

¹ Vol. viii, New Series.

contraction and obliteration of the remaining cavity. I believe that I have now arrived at a perfectly safe and satisfactory method of effecting this result. The following is in brief the treatment which I adopt. Thrust a trocar and canula (the larger the better, but not of less dimensions than a No. 12 catheter) into the most prominent part of the tumour, provided that this be, as usual, in one or other hypochondria, or not very distant from it. Assist the escape of such cysts or broken cyst-membrane as may be protruded by the tension of the parts, by a catheter wire formed into a little hook at the end; retain the canula by threads or tapes attached to holes in its shoulder, and well secured to the surface by strips of adhesive plaster; protect against injury from the edge of the canula by the insertion of an elastic catheter, loosely tied to the canula so as to allow of free play in the respiratory and bodily movements. For the next week nothing more need be done in the generality of cases, beyond the occasional removal of the catheter and the teasing out of such cysts as present themselves at the outer orifice of the canula. A week will suffice under these circumstances to effect adhesion between the cyst and the abdominal wall, if this have not already occurred, and it is not possible to predicate what the state of the case may have been before tapping. After the lapse of seven or eight days, when the patient usually begins to experience uneasiness from a return of the tension of the cyst, or from decomposition of its contents, or both, we should evacuate the contents of the cyst. The canula, which has now become loose by suppuration of the wound, should be removed *over* an elastic catheter previously introduced into the cyst; then there will be no difficulty in introducing a large catheter by its side, one always being retained within the cyst as a guide. Having thus provided a free passage into the cyst proceed to evacuate its contents. For this purpose, I have had made large (No. 20) elastic catheters, with a lateral eye about one inch long by one eighth of an inch wide. By means of an ordinary brass syringe with a fine nozzle, cyst-membrane is drawn into the eye of the catheter, and while tension is maintained it is withdrawn, and the cyst thus removed from the sac. By patient and continued repetition of this process, a very large sac may be more or less completely emptied in the course of two or three hours, cyst-membrane of any size and thickness

being easily removed. The lining membrane is not usually separated until the 9th or 12th day. When the sac is free from cyst-membrane, fluid injected by one catheter flows out by the other readily and without hindrance. In some cases a larger trocar and canula may be used, and then the sac may at once be more or less completely emptied by the use of a No. 20 catheter as above described; but, as a rule, there is no need of such haste.

As an aid in clearing away the cyst-membrane a weak solution (1 in 60) of carbolic acid may be freely injected provided that as much fluid passes out of the sac as is injected into it, and that no undue tension of the cyst occurs at any time from lack of a sufficient reflux. As an *aid* I have said carbolic acid may be so employed, but its use or that of creasote, as long as any cyst-membrane remains in the sac, will be necessary in order to prevent decomposition of the fluids (bile and serous liquid chiefly), which are rapidly passed out when the tension of the tumour is decidedly reduced. For some days it will be necessary to wash out the sac twice a day, a pint or more of the carbolic-acid water being used until it flows out colourless. After the cyst-membrane is discharged, once a day will suffice, and when we are satisfied that the lining membrane has come away, the discharges being sweet, there will be no further need of the injection of antiseptics. All catheters (sometimes I have inserted two or three small ones by the side of the largest in order to keep the passage to the sac sufficiently open) excepting the large one may now be removed. This, too, should be removed, washed and oiled, and then replaced, once a day. It should be passed to the furthest limits of the sac, and then before fixing the tapes a play of about an inch should be given to allow of the contraction of the cyst. As this occurs, the catheter may be occasionally shortened. It is necessary to pay attention to the directions just mentioned, for if the sinus be allowed to heal before the cyst has healed it may become dilated into an abscess. Such a result came under my notice two years ago. A young girl who had been under the care of my late colleague Dr. Murchison was sent out of the hospital before the sac had healed, and with directions to keep the piece of drainage-tube inserted, and present herself from time to time, failed

to observe these directions, and, as the sinus healed a few days after she discarded the drainage-tube, she considered herself well, but after an interval of a few weeks she presented herself suffering from pain in the hypochondrium and slight pyrexia. The sinus had partially opened a day or two before her readmission, but there was pain and tension in the seat of the original tumour, and on dilating the sinus the catheter passed a distance of eight inches, and communicated with a cavity which discharged about six ounces of pus. Although a fair amount of attention was subsequently paid to this case the healing was slow, and it was fully six months before it was completed. The patient, however, remained in good health during the process.

In the case given below, some of the more important matters relative to treatment are well illustrated, and it may be conceded that the injection of antiseptics was continued too long. This, however, was an error on the right side.

I am greatly indebted to my friend Dr. Ballance, who was then acting as my house physician, for his attention to this case.

Hydatid tumour of the liver of about eight years' duration ; suppuration in consequence of a fall ; puncture ; complete evacuation of the contents of the cyst on the eighth and tenth days ; maintenance of the opening ; gradual contraction of the sac ; healing by the seventieth day ; radical cure.

July, 1881.—Catherine M—, æt. 44, a healthy woman of dark complexion, the mother of three children, one of whom, the youngest, aged five, is living. Her husband has been dead three years, and there has been no conception since the birth of the last child, but for the last seven or eight years she has had retching of clear bitter water, resembling the morning sickness of pregnancy, accompanied by "fearful pain in the left shoulder." In childhood she had scarlet fever, measles, and whooping-cough. Her only illness since was an attack of pneumonia, with which she was laid up a month.

The symptoms of her present illness began eight months ago. They were, pain in the lower part of the right chest, anorexia, especially on rising in the morning, irregular

action of the bowels with deficiency of bile, progressive swelling of the abdomen, with increase of the pain both in degree and duration. At the end of June, 1881, she fell downstairs, and thus brought her troubles to a climax. She was admitted into Christian Ward three weeks afterwards (on 20th July, 1881), having suffered severe pain and distress in the interim.

On admission her temperature was 102.8° , her expression anxious. She complained of vomiting, and of pain and swelling of the right side. A dry cough increased her distress, and the breathing was a little accelerated. The lower ribs of the right side were bulged forwards by a tense, dull, very obscurely fluctuating, extremely tender tumour, which invaded the right hypochondrium and epigastrium. Measurement of the side showed an increase of two inches; the lower edge of the liver corresponded to a line about one and a half above the umbilicus. There was complete dulness of the chest at the base of the right lung behind, with pneumonic crepitation and broncophony, except at the lowest part, where the breath sounds were absent. The pulse was 120.

Hydatid cyst of the liver pushing up and irritating the inferior lobe of the right lung was diagnosed, and as the symptoms had become urgent a No. 12 trocar was passed into the cyst through the right hypochondrium under the rib-margin, nearly in a line with the nipple, within four hours of her admission into the hospital.

A large number of cysts, some of which were moistened with pus, protruded. The canula was retained, the edge being guarded by the insertion of an elastic catheter, and for the next four days a large number of cysts were discharged with a moderate amount of sweet yellow pus, a hooked wire being occasionally used to aid their escape.

On the fourth day the canula was removed over an elastic catheter previously inserted, and a second catheter (No. 3) then passed into the sac by the side of the other. As but little discharge escaped through the catheters the canula was again slipped into the sac over one of them on the day following, and much cyst evacuated. The discharge for the next few days was rather scanty, and was becoming foetid.

On the eighth day, therefore, the canula being again removed over a No. 5 elastic catheter, a No. 20 elastic

catheter was easily introduced by its side, and then by means of a fine-nozzled 4-oz. brass syringe, cyst-membrane was readily drawn through the wide eye of this large catheter, aspiration being sustained during the act and quantities of very large and thick cyst-membrane were drawn out of the wound every time the catheter was withdrawn. As the catheter could be readily passed by the side of the guiding one into the cyst this process was kept up for about three hours, and until nearly a quart of hydatid cyst, moistened with foetid pus, was removed; an ounce or two of carbolic-acid water (1 to 20) was then injected and removed, the process being repeated until about a quart had been used and the fluid came away clear. The cyst being thus fairly emptied very great relief was experienced, and by daily repetition of the process for the next two days about as much more cyst-membrane, some very large, was removed, and this was accompanied by a discharge of yellow bile.

The cyst was now completely emptied, and for the next three weeks it was daily washed out with carbolic-acid water, and then, as there was some evidence of carbolic-acid poisoning, with a weak solution of chlorinated soda, the fluid readily flowing from one catheter as it was injected by the other.

On the thirty-eighth day the catheter passed a distance of eight inches, and the cyst held about five ounces of fluid without discomfort.

Fifteen days later the cyst was reduced to half its size, the discharge was normal pus and small in quantity. The larger tube was alone retained and shortened from time to time as the cyst contracted.

On the seventieth day after the primary insertion of the canula, the sinus had quite healed and the surrounding abdomen and rib margin was normal and bore deep pressure without inconvenience, resonant below, and normal liver dulness above.

She was discharged quite well on the eighty-eighth day.

On admission there were signs of pneumonia, but as the cyst was a large one and pushed the diaphragm upwards, it was not possible to accurately determine the amount. All her symptoms were relieved by the evacuation of the contents of the cyst, the temperature becoming normal except occasionally in the evening when it twice or thrice rose to 101°. On the

fourteenth day it attained $102\cdot6^{\circ}$, and this was associated with the development of a little pneumonia with rust-coloured expectoration in the upper lobe of the right lung. A week later this had subsided and remained normal until the sixty-fourth day when it rose to $102\cdot4^{\circ}$, as a result of a slight attack of quinsy.

At the time she left the hospital the lungs were quite healthy and she was in good condition with a healthy colour.

I saw her from time to time during the next six months and again in July of the present year, two years after the cyst was opened. From the time she left the hospital up to the present hour she has had excellent health without interruption; and being quite free from her old disabling sickness and pain, has led an active life of hard physical labour. On examination at this date (July 20th, 1883) I find the chest normally resonant, and the expansion and sounds of the right lung full and normal to its base. Owing to the chronic curvature of the bony ribs over the situation of the tumour, there is a slight increase ($\frac{3}{4}$ inch) in girth round this side as compared with the left, and there is a larger amount of resonance in the region of the liver than normal. The abdomen and right hypochondrium are very supple and bear free manipulation without any discomfort. No trace of tumour or induration can be felt. A large scar, nearly as large as the navel, is retracted close under the margin of the ribs in a vertical line with the right nipple.

In my former communications ('Medico-Chir. Trans.,' vol. xlix, and 'St. Thomas's Hosp. Rep.,' vol. viii, p. 3) I have reduced the literature of the subject into synoptical tables and have drawn some general conclusions from them. I am sorry that my time and opportunities do not allow me to do more on the present occasion than notice those communications which I have received through the courtesy of their authors.

In Mr. Lawson Tait's tables,¹ Nos. 22, 24, 28, 57, and 80, are cases of hepatotomy for hydatids of the liver. These all show the advantage of making a free opening—a practice which I have always advocated,—and there can be no doubt that abdominal section and hepatotomy will always be attended

¹ "An Account of 110 Consecutive Cases of Abdominal Section." Reprinted from the 'Med. Times and Gaz.,' Nov. 5th and 26th, 1881.

with better results than simple tapping or efforts to secure the discharge of the hydatids by an orifice too narrow for the purpose. In my opinion, a hydatid tumour should never be punctured unless the operator have determined to evacuate its contents within the eight or twelve days next ensuing, by some means or another.

The case which I have given above has proved to me how easily, by means of a wide-eyed catheter and a syringe, this may be effected. For cysts that can be safely reached by the trocar, abdominal section is therefore out of the question, and its adoption in an ordinary case may be compared with the action of the Scotch laird who, to get a bundle of sticks to boil his tea-kettle, is said to have cut down a tree.

Dr. Mortimer Balding¹ has given an account of four cases :

CASE 1.—M—, æt. 45, an indistinctly fluctuating tumour of the right hypochondrium. A week before admission into Somerset Hospital, Cape Town, he began to suffer rigors and night sweats, and the tumour became tender. About four days after, a small puncture was made, and pus escaped in small quantity. The wound was closed. Four days later a puncture was again made with a large trocar, twenty-six ounces of pus with hydatid cysts drawn off, and the wound again closed. He was relieved at the time, but died within the year.

With such treatment such an event was to be expected.

CASE 2.—F—, æt. 29. Tumour of the liver occupying the right hypochondrium. After an exploratory aspiration, the introduction of a large canula and trocar, release of forty-six ounces of offensive thick pus with hydatid cysts. The canula was retained, and the cavity washed with disinfecting fluid for the next four or five weeks, when contraction and healing took place. She was seen five years afterwards, and a radical cure was effected. I might consistently append my comment on Case 1 to this also—"With such treatment such an event was to be expected."

CASE 3.—M—, æt. 35. A large fluctuating tumour of the right hypochondrium with slight jaundice. Puncture with a large

¹ 'Hydatid Disease of the Liver, its Diagnosis and Treatment. A Thesis for the Degree of M.D. Cantab.' London: Harrison and Sons.

trocar, retention of tube, and gradual enlargement of the opening by means of catheters. Discharge of large quantities of purulent débris of hydatid cysts; shortly afterwards eruption of the same fluid through the lung continuing for several weeks. The drainage-tube in the wound was opened only occasionally for the discharge of pus and the injection of antiseptics, for air was apt to be drawn into the lung through this channel, causing great pain. The discharges in both directions gradually decreased, and, eight months after the puncture, the radical cure was completed.

Suppurated hydatids of the liver, when they are near the diaphragm, perforate it, and very rapidly discharge their contents into the bronchia. This is one of the strongest arguments for a free opening—or, I would rather say, for the speedy emptying of the cyst through a sufficient opening by the means I have indicated above.

CASE 4.—F—, æt. 36. Tumour of right hypochondrium. Simple puncture and removal of 148 ounces of fluid. Two years after, a return of her discomfort, and two years later still she again came under treatment.

During the next two months the tumour was punctured several times with various sized trocars, but on no occasion was there much fluid drawn off, and as the discharge did not prevent it the wounds rapidly closed. The last wound was enlarged by a bistoury and thirty ounces of offensive pus drawn off and the cavity washed out daily, but she died ten days afterwards. The sinus was found to pass upwards and backwards into an old hydatid cyst occupying the position of the lower lobe of the right lung, destroying the diaphragm and the greater part of the right lobe of the liver, the right lung being compressed and the heart pushed over to the left.

The result in this case may be taken as typical. If the operator had followed the treatment which I have so long advocated at the outset, the patient, I dare say, would have been alive at the present time. Simple tapping is a proceeding that gives nobody much trouble, although occasionally fatal it is rarely dangerous, it satisfies the diagnosis, gives immediate relief, and often lulls the patient into a feeling of security. Fortunately for the patient it often sets up purulent inflam-

mation in the sac, a condition which calls too loudly for relief to be neglected. But in those cases, or, at least, in most of them—my observation bids me say in all—where a cure seems to have been effected, the disease progresses insidiously just as it did at first, but sooner or later declares itself in a more extended form. Old hydated cysts, like the corms of the colchicum or the crocus, readily produce a new one by their side. I hold it therefore to be bad practice, and, on the evidence, unjustifiable practice, to approach a hydatid cyst with any other intention than that of completely emptying it and healing up the space that held it.

Dr. Jonas Jonassen, of Reykjavik, Iceland, has obligingly sent me through Dr. Magnusson, of Cambridge, his ‘*Doctor’s Thesis on the Echinococcus Disease of Iceland.*’¹ He gives an account of seventy-four cases, many of which are hydatids of the liver. If my knowledge of Icelandic had been sufficient for the purpose, or if I could have secured the services of an interpreter in time for this paper, I would have given a synopsis of these cases. Under the circumstances I am obliged to be content with calling attention to Dr. Jonassen’s interesting treatise.

Postscript to Case 1, p. 306, vol. viii, ‘St. Thos. Hosp. Rep.’—Shortly after leaving the hospital, in May, 1878, the patient married, and on 28th of June, 1883, she wrote to me in part as follows:—“In March last my husband died after a long illness. I have three little children. With regard to my health, I may just say that, with all the extra pressure upon both mind and body, I have not been laid aside even for a day. My restoration has been perfect.”

¹ ‘*Ekinokosygdommen, belyst ved Islandske Lægers erfaring.*’ Copenhagen, 1882.

PARALYSIS OF SERRATUS MAGNUS.

By H. H. CLUTTON.

THE condition about to be described does not often come under the observation of the surgeon, and the few fully-reported cases in English that I have been able to find justify me in thinking that the following notes may be of service. It is most often described under the title of "displacement of the scapula." It was thought that by "over-reaching" the lower angle of the scapula slipped over the edge of the latissimus dorsi, the few fibres of this muscle that are frequently found attached to the angle being ruptured. This cannot, however, I am sure, account for such very grave deformity as is seen in these cases.

I had better, perhaps, preface my remarks by saying that the condition sometimes called "winged scapula," so often seen in weakly children and girls of fourteen, is not here alluded to. This is a slight prominence of the lower angle of the scapula, generally seen on both sides and apparently due to general debility and want of muscular tone. The paralysis, on the other hand, is accompanied by a very marked and obvious deformity when the arm is raised, as will be presently described. Several cases of this paralysis have come under my observation in the out-patient room during the last few years, but unfortunately a record has been kept in only a few instances. One of these was a man kindly sent to me by Dr. Bott in February, 1882, with the following history :

He was a carpenter, æt. 45, and had been quite well in every respect till August, 1881; he then fell ill with typhoid fever, and did not return to work till the end of October. During these two or three months he felt no pain or inconvenience, but on resuming his occupation he found his right shoulder weak and uncomfortable. This gradually increased till the time of his application at the hospital. He had no pain whilst the arm was at rest, but as soon as he tried to raise it or push anything in front of him, he found that the right shoulder was weak and that it began to ache. Planing was the most painful and wearisome of all the movements he had to perform in his trade.

On examination, the right shoulder whilst at rest presented the following peculiarities, of which the accompanying woodcut,

FIG. 1.

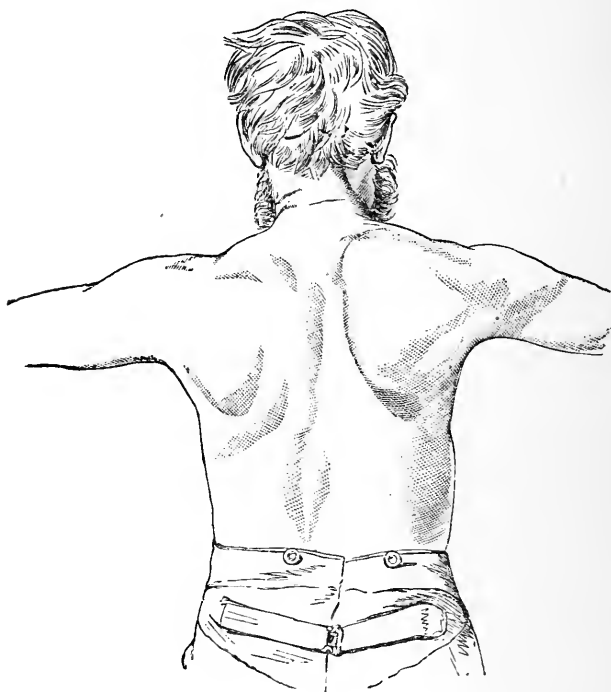


taken from a photograph, gives a fair representation. The whole of the right scapula is a little higher and a little nearer to the spine than the left. The inferior angle is slightly raised and

tilted inwards apparently from the weight of the arm at the outer angle. This also seems to have produced an unnatural obliquity of the posterior border by rotation through the centre of the body of the scapula. The action of the rhomboidei would also help to exaggerate the deformity caused by the weight of the arm at the outer angle by raising and fixing the inferior angle. This oblique position of the scapula is not well seen in the engraving, but it was readily felt during life that the posterior border was unnaturally oblique, and that by supporting the arm at the elbow the scapula resumed its normal relation to the spine as compared with that on the opposite side. It can also be detected by observing that there is a greater angle between the spine of the scapula and the fleshy part of the upper arm, by which a larger portion of the posterior half of the deltoid is exposed to view. On comparing the two sides in Fig. 1 it is seen that there is an increased breadth on the right just above the posterior fold of the axilla, which I think proves this point. The function of the serratus magnus of keeping the scapula from rotating when the arm is hanging from the shoulder and "underhand" movement may be going on would not be noticed except in such a case as this. Beyond the slight difference in the position of the two scapulæ there is nothing noticeable whilst the arm is hanging from the side. And really this is only discovered when the other symptoms have attracted attention. Quite otherwise is it when the arm is raised. Instead of gliding forward on the trunk the scapula is shot backwards and forms a most unsightly prominence in the dorsal region. When the arms are held out in a horizontal direction, as shown in the accompanying woodcut Fig. 2, the scapula is seen to ascend, probably from the action of the trapezius and levator anguli scapulæ unopposed by the serratus magnus. The outline of the scapula is clearly visible and the trapezius is seen to be acting strongly; the scapula not being held in position by the serratus magnus glides upwards and backwards. Normally the trapezius in this action of the arm raises the outer angle of the scapula and the body of that bone rotates slightly so as to bring the inferior angle further from the spine. That portion of the serratus magnus which is attached to the inferior angle undoubtedly drags the lower part of the scapula forward to assist in the rotation. The combined action of the trapezius

and serratus magnus is here upset and the trapezius unopposed merely elevates the whole scapula without effecting any rotation. Now if the arms are brought forward in the horizontal position so as to make the palms of the hands meet, a still greater deformity is produced. The dorsal scapular muscles, following the humerus as it is brought forward by the pectoral muscles, drag the scapula outwards. The ventral aspect of shoulder-

FIG. 2.



blade is thus exposed to view so that a considerable portion of this surface can be explored by the hand. If the serratus magnus were acting the scapula would be kept closely applied to the ribs and glide forwards on the thorax. No doubt the dorsal scapular muscles assist in this movement, but we here see how powerless they are alone to drag the scapula forward when the humerus is brought forward by the pectoral muscles. The most important function of the serratus magnus is well seen in this

action of the shoulder, namely, that of keeping the scapula closely applied to the chest-wall in the forward movement of the arm. The hand on the side of the paralysis fell considerably short of the other as they met, so that the arm loses in its length of projection. The length and power of "reach" is thus considerably diminished.

When the arms were thrown backwards in the horizontal plane the right scapula seemed almost to overlap the spine, standing out as prominently as in the case of the outstretched arms. This was no doubt chiefly effected by the trapezius, for the rhomboidei, even if they were free from paralysis, which must remain doubtful, could have had very little power in drawing the scapulæ backward from their altered relations to the posterior border. But the latissimus dorsi must also have had considerable power by acting on the humerus and thus pressing the scapula backwards after the trapezius had from its position ceased to act. In viewing the patient from the front during all these movements, the digitations of the serratus magnus were clearly visible on the left but quite invisible on the right.

In fig. 3 a much too accurate copy from a photograph has been made, so that the arms appear quite unnatural. It nevertheless illustrates the principal points to which allusion should be made. The patient has been told to raise both arms upward and forward, and to try and keep them both in a similar position. It is seen that in his efforts to raise the right arm to the same degree as the left, the body has been inclined to the left. The right upper arm is not much, if anything, above the horizontal position if one takes into consideration the inclination of the body, which is easily appreciated by looking at the relative height of the shoulder on each side of the neck. Notwithstanding all his efforts, which are shown by the contracted condition of trapezius and deltoid, this elevation is not fully accomplished on the right side, but by flexing the right elbow the forearms are brought parallel to one another. This, together with the bending of the trunk, is the patient's idea of raising the two arms as far as possible to a similar degree of elevation. In this movement the scapula normally rotates considerably on the ribs by the combined action of the trapezius, serratus magnus, and infra spinatus. By this rotation the inferior angle glides away from the spine and the outer

angle is raised. The infra spinatus and serratus magnus are the chief muscles that act upon the lower end of the scapula. At the same time the outer angle is raised by the trapezius, and the muscles acting upon these two angles produce this rotation of the scapula which enables the arm to be raised above the horizontal line. But it is apparent that unless the scapula has a stability for this pivot-action such as the serratus magnus would give, this movement cannot be effected. It is

FIG. 3.



doubtful how far the serratus magnus can itself act upon different parts of the posterior border of the scapula. But it would seem as if it might have some effect in drawing the inferior angle farther from the spine than the rest of this bone and thus assisting the rotation.

It should be noticed also in Fig. 3 that the humerus is considerably abducted. This point will be again referred to in relation to some cases in which the arm is said to have been

raised above the horizontal line although the serratus was paralysed.

The same kind of displacement of the scapula occurs in this movement of elevation as in the case of outstretched arms. The scapula becomes exceedingly prominent, recedes instead of advancing, and is evidently on a higher level than the left. The prominence is so great that one can take the whole thickness of the scapula with its attached muscles at any point along the posterior border between one's finger and thumb. No difference was noticed on inspection between the two sides of the chest during the respiratory movements. With his arms raised and fixed (as in Figs. 2 and 3) and the observer's hands placed upon the sides of the thorax, no difference was detected with the deepest inspiration, but I think now that more careful observation was required, to which point allusion will be subsequently made.

Let us continue with the report of this patient, whom I have taken as an example, before proceeding further with attempts at an explanation of this singular deformity.

On February 24th, 1882, a few days after he was first seen at the hospital, he was placed under the care of Dr. Kilner who succeeded in restoring the action of the muscle and correcting the deformity. To Dr. Kilner the credit of this patient's complete recovery is entirely due. I have also to thank him for the following particulars of the treatment which he adopted. He was galvanised about twice a week with the induced current, of which the + pole was placed over the spine on a level with the superior border of the scapula and the other over the digitations of the serratus magnus. At first the current had to be strong before the muscle would react, but the difference in the amount of projection of the scapula, when the arm was raised, after each application was always well marked. By the end of March the muscles reacted normally to the induced current, and the degree of deformity had very decidedly diminished. He could also use the arm more easily at his work and with less sense of fatigue, but it was not till the end of June that he felt completely recovered. There was then only a slight difference in the movements of the two sides, and scarcely any projection of the scapula when the arm was raised from the side.

As regards the etiology of this paralysis, I suppose it has been frequently seen as a part of the disease known as progressive muscular atrophy, but I think it must be rare as a sequel of typhoid fever. Bäumlér in 'Deutsches Archiv für Klin. Med.,' 1880, Bd. xxv, p. 304, records a most interesting case of this kind. A man, æt. 50, two months after the termination of a rather severe attack of typhoid fever, was affected by paralysis in the right arm accompanied with burning pain in the neck. In a fortnight this was much better, and the right arm appeared to be only weak, when suddenly the left forearm became paralysed, and three months after this, paralysis of the right serratus magnus was observed. In ten months from the first appearance of the paralysis there was a noticeable improvement, and in a further period of six months the man had completely recovered. Galvanism was the treatment employed. Bäumlér alludes to other cases occurring after typhoid fever recorded by Caspari ('Wiener Med. Wochenschrift,' 1868, S 433), L. Bruck ('Fall von Serratuslähmung nach acuter Krankheit,' Breslau, 1873), and Berger in his 'Monograph' refers to another recorded by Nothnagel ("Die nervösen Nachkrankheiten d. Abdominaltyphus." 'D. Archiv f. Kl. Med.,' 9 Bd., p. 480). Murchison in his 'Treatise on Continued Fevers,' 1873, p. 561, remarks on the occasional appearance of paralysis as a sequel of typhoid fever, and says that "it may not supervene till many weeks after the commencement of convalescence," and that "it is usually temporary, recovery taking place within a few weeks or months."

Other causes have been assigned, such as blows and strains. Dr. V. Poore relates a very interesting case in the 'Clinical Society's Transactions,' 1875, p. 83, of a man who received a severe strain in his right arm which was followed the same evening by pain and numbness. The paralysis in this case supervened nine months afterwards. Niemeyer ('Translation,' 1873, p. 335) records a case which came under his observation of "a carpenter who used to carry heavy beams for buildings upon his right shoulder." He "had to employ the left shoulder instead on account of the development of a palsy of the right serratus muscle. Some time afterwards palsy of the left serratus also began to appear."

In three other cases that came under my own observation,

no definite cause could be assigned. They were between the ages of twelve and fifteen. Two were on the left side and one on the right. One of the former had almost entirely recovered after a few months' treatment by galvanism, but in his case the deformity and pain on movement had only been noticed for a fortnight. In the other two unsuccessful cases it was quite open to question whether they were not due to infantile paralysis, as the mother in both instances had always thought there was something wrong with the shoulder since infancy.

Erb in 'Ziemssen's Cyclopædia of Medicine,' vol. xi, p. 530, seems to think that "in the great majority of cases the paralysis is peripheral, and arises from direct injury to the nerve; such, for instance, as may result from carrying heavy loads on the shoulder (Wiesner), from pressure or contusion, blows and concussion of the shoulder, gunshot wounds;" he says, "at any rate paralysis of the serratus, both unilateral and bilateral, has not unfrequently been observed after over-exertion of the muscles of the shoulder, as in mowers, puddlers, shoe and rope makers."

Berger in his 'Monograph' makes the same observation that when it arises in patients not the subject of progressive muscular atrophy it is most frequently due to some direct injury, over-work, or to "catching cold;" and that on this account it is found chiefly in men of the working-class, and on the right side of the body.

The anatomical and clinical aspects of this paralysis are, however, the most interesting, and have received a considerable amount of attention amongst French and German authors.

1. Duchenne ('L' Électrisation localisée,' Paris, 1872, p. 943) states that there is no appreciable deformity of the shoulder in simple paralysis of the serratus magnus when the arm is at rest and by the side of the body, and that when this deformity is present during the position of repose the lower portion of the trapezius is also paralysed. Bäumlér has contested this point, and says that there was certainly no paralysis of the trapezius in his case, and yet undoubtedly there was present a certain amount of deformity when the arm was hanging by the side. The dropping of the shoulder, the raising of the inferior angle of the scapula, and the increased breadth of shoulder from greater exposure of the deltoid, are all points exceedingly well

shewn in the drawing illustrating his paper ('D. Arch. für Kl.M.,' Bd. xxv, p. 308). My own case (Fig. 1) supports this view, for there certainly was no paralysis of the trapezius as was proved electrically by Dr. Kilner. It is true the deformity was slight, and much less than appears in Bäumlér's case, but still sufficient to support the conclusion that there is a difference on the two sides in the position of repose without any paralysis of the trapezius.

2. It is stated by nearly all observers that when the serratus magnus is paralysed the arm cannot be raised above the horizontal position, and Berger goes so far as to say that it is the principal symptom. This one can readily understand on looking at the movements of the scapula during this raising of the arm in a healthy man. The deltoid brings the arm to the horizontal line, and beyond this point elevation is effected by rotation of the scapula upon the trunk by which the external angle is directed upwards and the inferior angle is dragged away from the spine. The trapezius chiefly produces the raising of the outer angle, but it appears here as if the action of the serratus were necessary for the full performance of the movements of rotation. The trapezius can raise the scapula as a whole but it cannot without the serratus raise the outer angle alone and so make it rotate upon the ribs. According to Duchenne the converse of this happens when the serratus is paralysed. As soon as the arm becomes horizontal the external angle is depressed and the inferior angle approaches the spine. The rotation through the vertical axis of the scapula is in the opposite direction to that in health. This seems to be a slight exaggeration, but it decidedly indicates the direction in which the scapula moves when the arm is raised. It would, however, be more correct to say that the rotation in the natural direction by which the inferior angle is removed from the spine can no longer be accomplished. And in some cases of this paralysis the whole of the scapula is raised, probably by the action of the trapezius and levator anguli scapulæ, as in the case here described, seen in figs. 2 and 3. And in another case that came under my observation of a boy æt. 14, who had been seen more than a year before in the same condition, this raising of the scapula was so marked that one could see the posterior or superior angle when looking at the boy from the front. As I have already stated nearly all observers agree as to the inability of the

patient to raise the arm above the horizontal line, but there are apparently a few exceptions. In Dr. Vivian Poore's paper, to which I have alluded, he states that his patient was able to raise his arm above the level of the shoulder, but there is no explanation given of the manner in which this was accomplished; and Dr. V. Poore records another case at the same time in which the patient was quite unable to do so. Baümmler's case is extremely interesting in relation to this point. His patient could raise the arm above the shoulder but only with considerable abduction. It was not completely vertical or parallel with the other arm. This is well shown in an engraving fig. 3, p. 310 of his paper already quoted. He argues that this can only be done by a dislocation downwards of the head of humerus, as in a case related by Erb in 'Ziemssen's Cyclopædia,' or by a very powerful development of the abductors, especially of the infra-spinatus. This muscle when the arm is raised can by its contraction prevent the inferior angle slipping back towards the spine.

The rotation of the scapula by which, as we have already explained, the inferior angle is removed farther from the spine, and the external angle is raised, can, one would imagine, be in time accomplished in paralysis of the serratus by a compensating development of the infra-spinatus. Baümmler states that his patient was a very muscular man, and that the infra-spinatus on the side of the paralysed serratus stood out when the arm was raised like a hard roller, and that the trapezius appeared to be equally exaggerated in its contraction. These muscles compensating the deficiency of the serratus produced a certain amount of rotation of the scapula. Much more is said in support of his argument, which cannot here be recapitulated, but sufficient, I hope, is stated to explain the apparent discrepancies which exist as to raising the arm above the horizontal line amongst the various authors who have described this paralysis. Duchenne's statement that in these cases where the scapula deviates from its normal position to such a marked degree the trapezius is always also partly paralysed, is not supported by the cases I have described, nor is it confirmed by the cases of many other observers.

3. The action of the serratus magnus upon respiration is very variously described, some authors deny that it has any power upon the chest at all, some affirm that in certain positions of

the body it distinctly acts as an extraordinary muscle of inspiration. In these cases of paralysis there is a splendid opportunity of testing its power to act on the chest-wall. I am afraid that my case cannot be used as an argument either way, for the observations were not sufficiently accurate. But Dr. Vivian Poore has demonstrated that by careful measurement with a leaden cyrtometer considerable difference between the two sides of the chest can be shown to exist on raising the arms, even during quiet respiration. This difference is still more marked on deep inspiration. Erb simply makes the statement that "respiration is not in any way disturbed, even when the paralysis is bilateral; the serratus is not, as was believed by Bell, Stromeyer, and others, a muscle of inspiration." If the reader will refer to Dr. Poore's paper he will see by the carefully-recorded outlines of the patient's chest that there is at least a very great difference in the shape of the two sides in both quiet and deep inspiration. I am only sorry that I have not confirmed this valuable record by similar observation of my own.

The following works have been referred to in the course of this paper:

'Deutsche Chirurgie,' 1881, Lieferung lxiv, p. 289. A list of references on p. xxv of the same volume has also been of great value.

'Ziemssen's Cyclopædia,' vol. xi, p. 530.

Duchenne, 'L'Electrisation localisée,' Paris, 1872, p. 939.

Dr. Vivian Poore's paper in 'Clin. Soc. Trans.,' vol. viii, p. 83.

Berger, 'Die Lähmung des Nervus Thoracicus longus,' Breslau, 1875.

Bäumler, 'Deutsches Arch. f. Klin. Med.,' 1880, Bd. xxv, p. 304.

A paper by Dr. Ferrier on the same subject has appeared in the 'Lancet,' June 9th, 1883, p. 998, since the above was written. In his case there was no deformity when the arms rested by the side. The rhomboidei were, however, paralysed, so that the inferior angle of the scapula was not drawn towards the spine; the posterior border did not therefore assume the oblique position described in fig. 1.

TWO CASES OF PEMPHIGUS.

BY J. F. PAYNE, M.D., F.R.C.P.,
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CONSIDERING the extreme rarity of Pemphigus, and the important practical questions which have been raised in relation to its treatment, I think the following records may possess some interest. If they should be thought somewhat long, I can only plead that the natural history of pemphigus, like that of many diseases of the skin, is as yet very imperfectly written.

CASE 1.—The most obstinate case of pemphigus I have ever seen, perhaps the only one in my experience which may be described as absolutely incurable, was that of the little boy whose nails are represented in Plate I.

W. P— first came under my care in July, 1874, when he was three and a half years old. A pale child, of rather delicate appearance, with no special malady except the skin affection. He showed characteristic blebs of pemphigus on various parts of the limbs; the head and trunk being free. Those on the knees and elbows were the largest and most conspicuous, being one to two inches in diameter. There were smaller blebs on the fingers. The nails showed the appearance represented in the figure. Some were broken, thickened, and irregular. Some so much thickened as to appear solid, like the claw of an animal. Some almost absent or rudimentary, from having grown again

imperfectly after being destroyed by the disease. This appearance is seen in the figure in the middle and third fingers of the right hand (Plate I, fig. 1).

The eruption was not painful, and though it was said to itch, the amount of irritation was evidently not great.

The bullæ had the characteristic appearance of pemphigus, coming up as perfectly clear blebs without any surrounding hyperæmia; though when once formed they became inflamed, and often suppurated. Once or twice only hæmorrhage took place into the bullæ.

It was noticeable that blebs appeared wherever the skin was injured. A large one was formed on the knee after a fall; and any lesion, such as a pinch or blow, produced similar affections of the fingers. It was not, however, in all cases possible to trace the blebs to a traumatic cause, and I believe that a great many were spontaneous. There was no appearance of any hereditary syphilitic taint; and nothing in the family history to raise such a suspicion. He was injudiciously fed, having both beer and tea.

History.—The child was said to have shown the disease when fourteen days old in the form of blebs on the fingers, and had since then never been free from it, or only for a short time. He had had no serious illness. The mother had two younger children, who were healthy, and had had one miscarriage. Both the mother and father said to be healthy.

There was nothing else to throw any light on the case, but as the child remained under observation and treatment for three years I think a short history will not be without interest, either as regards the natural history or the treatment of the disease.

When the child first came he was anæmic, and had a bad appetite, so that a tonic (quinine) was given, and the blebs ordered to be dusted with oxide of zinc powder.

This treatment improved his general health, but no effect was produced on the skin.

Taking into consideration the difficulty of excluding the possibility of syphilitic taint and the almost universally held opinion that infantile pemphigus is of syphilitic origin, I thought it right to try the experiment of putting the child through a mercurial course, though not myself anticipating much success in the experiment. Accordingly, on July 23rd, he was put on

two grains of Hydrarg. cum cretâ daily, a dose which was afterwards increased to four grains, and the course continued for five weeks. Under this treatment the eruption became decidedly worse; and on August 27th he was put on syrup of phosphate of iron, for which was afterwards substituted steel wine and cod-liver oil. From this time there was a marked improvement; but on October 29th it was noted there was a fresh eruption which, however, again subsided.

The subsequent variations in the disease were observed during a period of about three years; and I think, as a contribution to the natural history of pemphigus, a short summary of the changes observed and the treatment adopted may be not without interest, especially as few continuous histories of such cases have been published.

In January, 1875, there was another relapse, but the condition of the child was not so bad as it had been at first. The same treatment was continued, and there was considerable improvement. Passing over intermediate notes, on April 1st, 1875, it is noted that he was much better, and that the bullæ when they appeared *healed much more quickly* than before.

This rapidity of healing was, both at that time and always an index of the state of the boy's health, and improvement in this respect was the most evident, if not the only effect of the tonic treatment adopted. Without at all curing the skin disease, it certainly made it more bearable.

May 13th, 1875.—Only a few small blebs were discoverable; and these arose *only* when as the result of injury to the skin by a blow or graze.

27th.—A fresh eruption of bullæ, which come and go rapidly.

June 10th.—More bullæ, which become purulent. The cause of this suppuration was not evident. At this time I began to administer arsenic, which, as is well known, has been sometimes considered a specific in the complaint. The commencing dose was Liquoris Arsenicalis, ℥j, bis die (not omitting the iron and cod-liver oil), and this was shortly increased to two and then to three minims.

August 5th.—A certain amount of improvement observed, the spots occurring only on the hands; but on August 19th they were seen also on the knees.

September 16th.—The eruption worse, the dose of Liq. Arsen. increased to four minims.

30th.—No improvement.

October 28th.—Only on the hands. Shortly afterwards arsenic increased to five minims and then to six, which produced some smarting of the eyes and puffiness of the eyelids.

December 9th.—The child was free from spots. To continue the arsenic.

23rd.—Two or three spots only on the hands.

This improvement, however, was only of short duration ; for at the beginning of 1876 (Jan. 6th) a rather considerable relapse occurred, several bullæ being observed on the hands, elbows, and knees. The child also looked pale and ill, but had no special arsenical symptoms. As I had been strongly impressed with the belief that comparatively large doses of arsenic had caused the improvement which I had noted up to nearly the end of 1875, I did not discontinue the drug, but increased the dose to ten minims twice a day, which, for a child under five, must certainly be considered a full if not a heroic dose. At the next visit (Jan. 20th) some improvement was noted ; but in February and March more blebs continued to appear ; together with (what I have never seen in any other similar case) an eruption of flat polished papules on the backs of the hands precisely resembling lichen planus.

At this time, however, the child showed premonitory symptoms of whooping-cough, which by the middle of March was so pronounced that all special treatment was discontinued. The child ceased to attend for some months, but appeared again on June 1st. He was said to be quite recovered from the whooping-cough, but had a relapse of pemphigus, which had lasted already fourteen days. He was very cachectic and evidently pulled down by the whooping-cough. On June 15th the note is : Fresh spots with suppuration.

Perhaps even those readers who have had the patience to follow me thus far will hardly care to have the history of the year 1876 written so minutely as that of the previous year. It may be enough to say that cod-liver oil and steel were followed by arsenic, and were given as before ; but with singularly little effect. From July to November I find the note to be always "No change" or "No improvement." A

slight improvement in November was followed by a severe relapse at the end of the year. Arsenic was discontinued in August, and quinine substituted without benefit.

In December, 1876, another drug was tried, namely, phosphorus, in the form of *Oleum Phosphori*, *℞ij*, combined with cod-liver oil, twice a day. This was continued in the early part of 1877, and was certainly accompanied by a marked improvement in the child's general health.

In February, 1877, the dose was increased to four and five minims with increasingly good results. About this time the pemphigus also showed marked signs of improvement, and on February 22nd I find the note—"Skin much improved. No new bullæ appear, and those present before are healing."

At this time an attack of bronchitis interrupted the specific treatment, and on March 29th there was a decided relapse, with numerous spots, some of them suppurating, but they are described as healing more rapidly than before.

No marked improvement was, however, observed, and in June the bullæ are noted as some of them showing hæmorrhage, a feature of the disease which, as I have since heard, afterwards became more marked.

On June 8th another rather severe fresh attack. The child feverish and described as very restless, but not otherwise ill. The peculiar feature which this attack presented led me to try the last therapeutical experiment which I had the opportunity of putting in operation for the relief of the patient, viz. the administration of salicylate of soda, a drug not at that time so universally used as it is now.

July 5th, 1877.—Ordered three grains of salicylate of soda three times a day. At this time it was noted that very large bullæ were present. In a short time improvement was noticed both in the skin affection and in the general health. Some fresh bullæ appeared, but they rapidly healed, and on August 9th the patient was "much improved."

Shortly after this the patient ceased to attend, owing, as I afterwards heard, to his parents having moved to another part of London, and I have not seen him since.

It appears, however, that the child was afterwards brought to St. George's Hospital as being more accessible, and came

under the care of my friend Dr. Cavafy, who has kindly informed me of the results of his experience.

The skin disease has since agreed precisely in its appearance and its course with what it was when under my observation with one exception. The occurrence of *hæmorrhage* into the bullæ which I noted on one occasion has now become a constant feature of the case. The results of treatment have, Dr. Cavafy tells me, been in his hands equally negative. Arsenic has been given, and in large doses, without curing the disease, and Dr. Cavafy does not think that any treatment has been of any avail. The condition of the nails remains the same.

Remarks.—1. There can be no doubt that this case was one of what is now universally called pemphigus, the *Pompholyx diutinus* of Willan and Bateman. It was characterised by the production of bullæ in successive crops, so frequently recurring that the patient was scarcely ever free from them, but also springing up from time to time in the form of a more acute and severe attack, which, if preceded by any improvement, might naturally be called a relapse. These greater recurrences happened about three or four times a year, and it was impossible to trace the immediate antecedent cause of them.

2. The most remarkable feature of this case was the fact that the bullæ hardly ever arose except as the result of some wound, bruise, or knock on the skin. Does the feature separate the case from pemphigus as generally understood? Would it be more correct to describe the case as one of excessive vulnerability of the skin? as if in this child a very slight injury produced the effect of a blister in healthy persons? I think this would not be an adequate account of the case for the following reason chiefly: That both the continuance of the disease and its more acute manifestations were accompanied by general symptoms, languor, cachexia, anæmia, or fever which constituted it a true malady.

3. In its bearing on treatment the case is interesting. We stand now between two diametrically opposite opinions on this point. The school of Hebra follow their master in asserting that no treatment by internal medicines is able to arrest the course of pemphigus. On the other hand, Mr. Hutchinson has lately most positively asserted the specific curative power

of arsenic, which has been recommended by several writers on skin diseases, especially by those of the English school. I think it can hardly be denied that the present case is evidence against the specific power of arsenic, since neither in Dr. Cavafy's hands nor in mine did it cure the disease.

But though this case was certainly incurable by any means used I would by no means say that remedies did no good. The severity and obstinacy of the eruption stood in a direct relation to the cachexia of the patient. When his health and general nutrition were good the spots were less numerous, and they healed more quickly. That this good indirect result was owing to the administration of tonics, such as cod-liver oil, iron, quinine, it was impossible to doubt, and it seems probable that the apparent temporary good effects of phosphorus and arsenic were to be explained in the same way.

With regard to the local treatment I should say that generally no local treatment was used before the bullæ were broken, though I did sometimes paint them with collodion, but was not able generally to do this early enough to have much effect. To the broken bullæ various simple dressings were used, of which zinc ointment appeared to be the most useful.

4. As regards the causes of pemphigus which have been assigned by different writers, such as cold, nervous depression, suppression of secretions, &c., it is pretty clear that no one of them would apply here, and that the disease was certainly what is commonly called idiopathic.

CASE 2.—James L—, æt. 70, came under my care as an out-patient at St. Thomas's Hospital on November 17th, 1881, with a severe eruption of pemphigus. As he did not improve, he was on November 29th taken into the hospital under Dr. Stone, by whose courtesy I was enabled to continue in charge of the patient.

On admission the following report was taken:—An old man, in a very feeble condition, suffering from an eruption of bullæ on the arms and upper part of the body, and very slightly on the legs. Around the neck under the jaws is a collar of large bullæ varying in size from a pea to a walnut, in parts continuous and almost confluent. On the clavicles and shoulders are scattered bullæ of about the same size, but they are most numerous

and severe on the arms, especially on the right. On both surfaces of this arm, but in greater number on the flexor side, are bullæ, some larger than on the neck. In the flexure of the elbows and axillæ they are very large and partly confluent. Smaller bullæ extend down to the wrist. The distribution is quite irregular. The left arm is similarly affected, and in the corresponding situations, but less severely, the bullæ being almost confined to the flexor surface, and not exceeding a pea in size. On the trunk are rather numerous scattered bullæ, but none larger than a pea. There are also a few small bullæ on the upper parts of the thighs. Some of the bullæ have broken, and the exudation has become caked and encrusted in the flexures, and has a somewhat offensive smell. Chest resonant, and breathing vesicular. Heart dulness beginning from above at the fourth rib, and limited by the left border of sternum. Apex-beat not clearly defined. No murmur. Liver dulness normal, splenic dulness well marked. No excitement or other unfavorable nervous symptoms. Tongue very rough, dry, and red. Bowels constipated. Pulse 84, weak; temp. 101°, resp. 24. Urine sp. gr. 1025, large amount of lithates, no albumen or sugar (on one occasion afterwards a little sugar was found).

History.—Health generally good. Has had measles, scarlet fever, and cholera. No history of syphilis. Never had gout or rheumatism. Has had gravel and passed a small stone.

Family history.—Father said to have died of paralysis; mother and one brother of causes unknown. No family history of gout or rheumatism.

Present attack began eight months ago, when a few small bullæ appeared on the face and gradually spread downwards to the neck, chest, and arms. The bullæ are always small at first, and quite transparent, with clear watery contents; they enlarge and the fluid becomes yellowish, and then, but not before, become surrounded by an erythematous zone. There is some itching, but more noticeable pain and sense of burning.

Further history of the attack.—The older parts of the eruption showed some improvement under the local and general treatment (of which I shall speak presently), but new blebs continued to form. The left arm became nearly as bad as the right had been, and in the flexures of both and in the axillæ

large, red, excoriated surfaces were formed. The pain and irritation of the eruption were, however, much diminished. On December 5th it was noted that the eruption had spread widely on the trunk, where it formed horizontal bands of spots, and also to the hips and thighs; and on the 7th extended two thirds down the thighs but not to the knees.

During the same period the fever remained high, and only subsided on December 6th (the eighth day). About the same time nervous symptoms of a marked character made their appearance. There was much delirium of a low kind. The patient was with difficulty kept in bed, and when he got out fell down. He was constantly "wandering," and talked of "looking for diamond pins" on the floor, but on December 10th he was described as "more rational." This low delirious condition recurred at frequent intervals during his stay in the hospital; it had almost the character of senile imbecility, and was accompanied by very great weakness.

During the second and third weeks the eruption was fading, the old bullæ kept drying up, leaving behind them only red erythematous patches, and no new ones formed. The temperature at the same time fell to normal. The nervous symptoms were much less severe, and the patient described himself as much better. He was still, however, very weak.

Treatment.—When the patient was admitted all local treatment had been neglected, and in consequence the worst parts of the eruption were covered with a thick crust of dried pus, serum, and detached epidermis, which was decidedly offensive. To correct this condition these parts were washed with a lotion containing ten minims of carbolic acid to the ounce. This quickly had the desired effect, but, some carbolic acid being absorbed, passed into the urine, producing, however, no further harm. Other bullæ were dusted with a powder of oxide of zinc and starch. Fresh bullæ, as they arose, were painted with flexible collodion. I know that Hebra condemns this practice, at the same time I believe it often prevents that secondary inflammation which is caused by the action of air upon the excoriated base of a bulla when it is broken. Afterwards, however, when the inflammation was less severe, this was not necessary and zinc ointment only was used. The internal treatment consisted in the administration of *Liquor Arsenicalis*,

at first in the dose of six minims thrice daily, afterwards increased to ten minims, and this dose was not exceeded. Purgatives were often needed.

The diet was milk diet, with beef tea and two, afterwards four, eggs daily.

First relapse.—On December 18th, three weeks after admission, the temperature, which had been normal for a week, rose to $100\cdot4^{\circ}$ in the afternoon, and showed this or a somewhat higher maximum for ten days. On the same day the patient is described as “wandering” and trying to get out of bed several times. Pulse 96 and weak. No new spots, the old blebs drying up. On the 20th, however, a new bulla made its appearance on the left wrist, and shortly afterwards a large one behind the right ear. No more bullæ appeared at this time, and on the 27th he is described as better, and quite rational though very weak. On the 29th the temperature was normal.

During this relapse the patient's condition was extremely weak. He was ordered on December 18th four ounces of wine daily, and on the next day Brand's essence of beef, two ounces thrice daily. Bromide of potassium was given every night in the dose of thirty grains, and the arsenic was temporarily discontinued. He had been taking it in full doses up to the time of the relapse. On the 31st December he was ordered Liq. Arsen. Hydrochl. $\mathfrak{m}\mathfrak{v}$, Liq. Ferri. Perchlør. $\mathfrak{m}\mathfrak{x}$, Aquæ $\mathfrak{z}\mathfrak{j}$, ter. die. ; and the diet was improved.

Repeated slight relapses.—In the early part of January the eruption recurred several times in a less severe form. On January 4th a fresh bleb, the size of a shilling, was seen on the inner surface of the forearm, which had come up in less than a day, and was not surrounded by any zone of congestion. On the 6th two more were found on the lower part of the back. On the 11th two blebs were seen on the right arm, five or six around the left knee-joint, and three small ones in the flexure of the right knee. On the 13th about half a dozen appeared on the chest. There were others in the left axilla and on the right hand. On January 16th it is noted that no more bullæ had appeared.

During this period the patient's health was improving. His temperature might be regarded as normal, never exceeding 99° or $99\cdot2^{\circ}$, though sinking sometimes to 97° , and once or twice

to a little over 96° . His appetite was good, his intelligence undisturbed, and he was rapidly gaining strength.

Rise of temperature.—On January 19th a fresh access of febrile temperature began. On that day the maximum was 100° , on the 21st 101.2° , and on the three following days it equalled or surpassed that limit. At the same time successive crops of bullæ were noticed on the chest and hands, and in either popliteal space. Afterwards they appeared on the axillæ, on the hands, and on the buttocks. The patient had up to this time been taking the dose of arsenic before mentioned, five minims, thrice daily, and on January 17th an attack of diarrhœa replaced the constipation from which he had previously suffered. Attributing this attack to the medicine the patient refused to take it, and had apparently found means to avoid doing so. It seems then that this relapse occurred while he was taking the arsenic irregularly.

On January 26th he was ordered as before ten minims of *Liquor arsenicalis* thrice daily.

During this relapse his general health was good in spite of the fever. He had no delirium, took his food well, and described himself as feeling well.

On January 29th the temperature fell to a maximum of 99° , and though on two occasions afterwards during his stay in the hospital it rose to 100° , it was, as a rule, normal, and the patient's general condition was satisfactory. A few bullæ arose after this from time to time, but in the early part of February the patient's condition was so satisfactory that he was discharged from hospital on February 15th apparently cured, except one bulla on the right hand, and was told to attend as an out-patient.

After this one small bulla appeared on the left hand, which was attributed to a blow. He was ordered *Liq. arsen.* $\mathfrak{m}\mathfrak{x}$, *Infus. Gent. co.* $\mathfrak{z}\mathfrak{j}$, *ter. die.* No more spots appeared, and on March 23rd those already mentioned had disappeared, leaving brown marks. He remained under treatment for two months longer. One or two small bullæ appearing occasionally on the fingers, but on June 1st the arsenic was discontinued as the eruption had disappeared, and he was suffering from slight gastritis and other symptoms due to arsenic. After this he appeared to be quite well, and ceased attending.

Remarks.—This case was notable for the severity of the eruption and the gravity of the constitutional symptoms. I have a coloured drawing, taken at the acme of the disease, which shows the local lesions to have been as severe as in most of those which have been figured in works on skin diseases as typical examples of the disease. The general condition of the patient was so serious as to make the prognosis very unfavorable, and more than once, especially during the first relapse, I did not at all expect him to recover. It is naturally a question of great interest to what his recovery was owing, whether it was spontaneous, merely resulting from the evolution of the disease, whether nursing and good feeding should have the credit, or whether it was due to the administration of arsenic. I was certainly inclined to attribute the patient's rapid improvement after admission to the effect of this drug, and his general progress, in spite of relapses, was such as to make one think that the treatment was beneficial. But one severe relapse occurred in spite of the arsenic, and it is unsafe to draw any conclusion from the bare fact of recovery, since doubtless patients have recovered under various plans of treatment. All we are justified in saying is that here was a severe case of pemphigus which completely recovered under arsenical treatment. On the other side of the question I have to quote the case of pemphigus in a child already related, in which arsenic was plainly inefficacious.

I am therefore disposed to think that Mr. Hutchinson's statements ('*Brit. Med. Journal*, 1882, vol. i, p. 5) as to the absolute and sole efficacy of arsenic in this complaint, are a little too sweeping. Nor is Hebra quite fairly represented as saying that pemphigus is invariably fatal. What he says is ('*Hautkrankheiten*, i, p. 580) that the malignant form "ends as a rule fatally," but he admits the simpler form in which recovery is the rule. He further says that it is difficult at the commencement of an attack to predict what will be the result; but he certainly says that the most unfavorable prognosis is to be made in cases of old people with numerous bullæ, repeated febrile attacks, prostration, &c., in fact just such a case as that which I have described.

Everyone will admit that a long series of cases is required to establish by induction the efficacy of any therapeutical method.

Nevertheless, such is the rarity of this disease that it is difficult to find any record of a series of cases, and impossible to find such a series treated on one uniform method. Hebra observed in twenty years' hospital practice only fifty (probably more correctly forty) cases, selected out of the 25,000 patients of all classes admitted annually into the General Hospital, and 8500 admitted annually into the Foundling Hospital. I have seen only three well-marked cases in twelve years' experience of the Skin Department in this hospital, besides three or four cases of the irregular or mixed form of pemphigus seen chiefly in pregnant women (called by Dr. Liveing, *Hydroa gestationis*, by Dr. Bulkeley, *Herpes gestationis*); and beside a few slight cases which have appeared in the out-patient department, but attended too short a time to be properly studied.

The difficulty of drawing a conclusion is further complicated by the fact that an acute attack of pemphigus, like other acute inflammations, tends to spontaneous decline; and even in chronic cases we find exacerbations or relapses which come on and go away quite independently of the action of remedies. Our administration of a remedy may happen just to coincide with the spontaneous decline of the eruption.

On the other hand, Hebra's negative induction is far from complete, since it would seem that his cases were treated with various remedies, while in order to establish the uselessness of arsenic all, or at least a large number, ought to have been treated with that drug.

The conclusion of the whole matter seems to be that the absolute specific of power of arsenic in this disease is not clearly established, but there is so much to be said in its favour that I should certainly prescribe it in any case of pemphigus which came under my care.¹

Cause.—With regard to the question of the causes of pemphigus, I should say that the patient himself attributed his illness to anxiety. He had been unsuccessful in business, and had pecuniary and other troubles. Pemphigus has been attributed to parasitic organisms. I examined the clear serous fluid of recent bullæ with high powers of the microscope, but failed to see micrococci or bacteria. When such a fluid is purulent

¹ Of course these remarks do not refer in any way to the bullous syphilide called syphilitic pemphigus.

no conclusion can be drawn from a simple examination of this kind. Some recent writers make the assumption that pemphigus is a neurosis, or, at least, of nervous origin, an assumption which I find nothing to confirm.

Temperatures.—As I do not know any full published accounts of the range of temperature in pemphigus I subjoin a table of febrile temperatures. The periods during which the temperature was below 99°, or thereabouts, are excluded as being normal.

Temperature in Axilla. Case of J. L.—Pemphigus.

Date.	Hour.	Temp.	Date.	Hour.	Temp.
1881			1881		
Nov. 29th	10 p.m.	101	Dec. 20th	p.m.	99 (?)
30th	4 a.m.	102·5	21st	a.m.	98·6
"	4 p.m.	101·8	"	p.m.	100·4
"	12 "	101·8	22nd	a.m.	98·4
Dec. 1st	a.m.	102·2	"	p.m.	99·2
"	noon	101·8	23rd	a.m.	99
"	p.m.	101·7	"	p.m.	100·2
2nd	a.m.	102·4	24th to 26th, normal.		
"	noon	102·2	27th	a.m.	101·2
"	p.m.	101·8	"	p.m.	99
3rd	a.m.	101·8	Dec. 28th, 1881, to Jan. 18th, 1882,		
"	noon	100·2	normal or subnormal.		
"	p.m.	100·8	1882		
4th	a.m.	99·6	Jan. 19th	a.m.	99,
"	noon	100	"	p.m.	100
"	p.m.	101	20th	a.m.	96·8
5th	a.m.	100	"	p.m.	100
"	p.m.	101	21st	a.m.	98·4
6th	a.m.	99·8	"	p.m.	101·2
"	p.m.	98·6	22nd	a.m.	99
7th	a.m.	98·8	"	p.m.	101
"	p.m.	100	23rd	a.m.	99·8
8th	a.m.	97·8	"	p.m.	101
"	p.m.	100	24th	a.m.	98·8
9th	a.m.	99·6	"	p.m.	101·2
"	p.m.	100·2	25th	a.m.	99·2
10th	a.m.	99·2	"	p.m.	101·4
"	p.m.	100·3	26th	a.m.	98·4
11th	a.m.	98·2	"	p.m.	99
"	p.m.	99·4	27th	a.m.	99·2
12th to 17th, normal.			"	p.m.	100
18th	a.m.	98	28th	a.m.	98·4
"	p.m.	100·4	"	p.m.	100
19th	a.m.	98·8	29th	a.m.	98·2
"	p.m.	100·8	"	p.m.	99
20th	a.m.	99	From this time on generally normal.		



DESCRIPTION OF PLATE I,

Illustrating Dr. Payne's Case of Pemphigus in a Child.

FIG. 1 represents the nails of the right hand. That of the thumb is thickened and deformed; that of the forefinger converted into a solid structure resembling a claw; those of the next two fingers are mere wrecks; that of the little finger alone is normal.

FIG. 2 shows the nails of the first three toes of the left foot converted into solid claw-like structures; those of the other toes were normal.

FIG. 3.—The nail of the left thumb, which is like that of the right hand.

From drawings by Mr. E. Burgess.

Fig. 1.



Fig. 3.



Fig. 2.



ON THE
ELECTRICAL RESISTANCE OF THE
HUMAN BODY.¹

By W. H. STONE, F.R.C.P.

I.

The writer, after premising that hitherto electricity in its application to the human body had not come up to expectations reasonable in the case of so powerful a force, and that it was evidently still in an embryonic state, mentioned some examples of the conflicting and contradictory statements made by different authorities as to its electrical resistance. These varied from 13,000 to 2875 ohms. and less. He believed it was enormously overstated, and had for this reason applied himself to make some more accurate determinations. He was at once met by three obstacles:—(1) The difficulty of making good contact through the skin of a living man. (2) The limitation of the amount of current by pain, and by the fact that the rapid opening and closing of strong circuits produced a tetanic state of muscle. (3) The fact that the human body is an easy electrolyte, almost immediately furnishing currents of polarisation.

As regards (1), the axiomatic statement seemed to be that the poles must be infinitely large compared with the current they had to conduct. This condition he had attempted to fulfil in

Abstract of a paper read before the British Association at Southport.

five different ways, two at least of which were successful: either by immersing the feet and hands in baths of brine in contact with an electrode of amalgamated lead or zinc of from fifty to a hundred square inches surface, or by soaking these extremities in brine, and then wrapping a strip of flexible lead two feet long by two inches wide about them, after the fashion of a surgical spiral bandage. The fact that the skin resistance was thus reduced to zero was proved to demonstration by an observation already recorded in 'Nature,' (September 13, p. 463), from which it appeared that the resistance of a corpse, treated with the spiral leaden bandages from foot to foot was 1150 ohms. and with solid silver conductors thrust three inches deep into the plantar muscles was actually 50 ohms more.

Under the heading of contacts it was essential to determine definite anatomical points from which the measurements should start, and which readily admitted of linear verification. Such points existed in the prominence of the ulna at the inner side of the wrist, and the lower edge of the external malleolus at the ankle. The shortest course traversed by the current between these two points had been measured to a quarter of an inch.

There were three principal directions in which determinations had been made:

1. From hand to hand.
2. From foot to foot.
3. From hand to foot.

No. 1 was much the same as the height of the subject, and was not liable to great variation.

No. 2 varied more, since the difference between very tall and short men lies chiefly in the legs.

No. 3 was perhaps the best test of the average conductivity of the body, since looped currents were sure to traverse the whole trunk, and even caused motor disturbance in the extremities not included in the circuit.

Three such observations were given, including one on a man of the exceptional height of nearly 8 feet.

As regards pain, it was noted that the E.M.F. used varied from three to ten bichromate cells of 1.8 volts each. Even the first was occasionally complained of, thus incidentally showing the goodness of the contact obtained. In morbid conditions,

such as that termed myxœdema, the E.M.F. of 10 cells or 18 volts through a resistance of only 1260 ohms was easily borne, and indeed hardly felt. The third difficulty, that namely of electrolysis, was the most serious; indeed the particular metal of which the electrodes were made sank into insignificance compared with the rapid and vigorous polarisation of the moist tissues of the body itself. A rotating commutator on Wheatstone's plan, and afterwards a metronomic instrument, by which the periods of alternation could be varied, were first used, but with only partial success. A more delicate mode of discharging was found in the use of an ordinary commutator key worked like a piano with the index and middle fingers of the left hand; a double contact key putting battery and galvanometer successively in circuit, being beneath the right index finger. The left keys being first depressed alternately, the right key produced a double deflection, while the bridge resistance was too low, which was replaced by an opposite double deflection when it was intentionally made too high. By watching the galvanometer a point was easily found where it ceased to "throw," and then three successive contacts in either direction were taken to determine resistance. In spite of all precautions the second measurement was sometimes a little in excess of the first, owing to a polarisation-current assisting the battery. This, however, never amounted to more than about five ohms, and was easily allowed for. Between each set of observations a short circuit key, inserted outside the bridge, was closed for at least a minute, so as to discharge patient, bath, and electrodes.

The measurement was then repeated with inverted current, and the mean taken.

One set of examples out of many was read to the meeting. Three men of very different heights were tested according to the following table :

	Height.			Weight.			Ulna to malleolus.			Foot to foot.			Foot to hand.		
	ft.	in.		st.	lb.		ft.	in.		ft.	in.		ft.	in.	
1. Mr. Todd ...	5	6	...	7	13	...	5	9 $\frac{1}{2}$	...	9	45	...	13	20	
2. Mr. Shackel ...	6	3	...	13	0	...	7	0	...	9	30	...	10	27	
3. Hungarian Giant	7	8	...	—		...	8	7	...	9	30	...	10	32·5	

Two of these were students at St. Thomas's Hospital; the third an Austrian now exhibiting at the Aquarium, and kindly lent to the writer for examination. All the three were singu-

larly strong, healthy, well-proportioned men, of active athletic habits. An interesting illustration of physiological laws here incidentally cropped out, showing that, in the normal human body considered as a machine, as is the length of the osseous levers so is the sectional area of the motor muscles. This in the present instance results in an almost complete identity of the electrical resistance, increased length being very fairly balanced by increased sectional area in the conductor. A good test of morbid leanness or fatness might probably be founded on this identity.

A few words only were given to the variations of human resistance in disease and with alteration of temperature. The latter have already appeared in the columns of '*Nature*,' (on June 14 and September 13).

As regards the former, six cases of hemiplegia were cited; three on the right and three on the left side of the body, in all of which the paralysed was found less resistant than the healthy side, in amounts varying from 120 to 730 ohms. The only case which differed from this rule was that of a worker in copper, from whose secretions three milligrammes of metallic copper had been extracted, where the cupreous impregnation obviously modified the general resistance of the body, as the writer had found it to do in the case of lead and mercury also.

A confirmation of the view already expressed by the writer of the paper, that the human body follows the law of solid rather than that of fluid conductors under changes of temperature, had occurred in the instance first quoted (June 14th, p. 151), where the occurrence of dropsical effusion in the lower extremities permanently reduced the resistance from the values originally given, the lowest of which was 2300 to 750 ohms.

II.¹

THE experiments which I have now for some years been carrying out as to the various forms of medical electricity have begun to furnish trustworthy results. Some of these, with the help of Dr. Kilner, were incorporated in a paper read before

¹ "Note on the Influence of High Temperature on the Electrical Resistance of the Human Body." '*Nature*,' June 14th, 1883.

the Society of Telegraph Engineers on March 9th, 1882. We there stated that at present "we are hardly in a position to say how far the resistance of the body varies in health; but in disease it can be fairly stated that it sometimes augments." Of this fact we gave illustrations.

It had often occurred to me that the temperature of the human body very probably influences its resistance; and some experiments had been made with a view of testing the amount of such influence. But in pathological researches it is often difficult to find a case not open to exception, and it is frequently necessary to wait a considerable time before, in the impossibility of experiment, accident presents one possessing the necessary conditions. Such a case I have now met with, and it is worth while to place it on record, if only to enable other observers to prosecute this line of investigation.

The patient is a young and intelligent gunsmith aged twenty-two. He had rheumatic fever severely twelve years ago, which, as is usual in young subjects, has left permanent heart disease behind it. This did not, however, prevent his following his trade until the beginning of April in the present year. He then began to suffer from morning rigors, occurring at first at the interval of from seven to ten days, but, since Easter daily. He came into my ward in St. Thomas's Hospital on April 28th. It is not necessary to detail the medical history of the case in a scientific periodical; it will be sufficient to state that about 8.30 a.m. he was in the habit of suffering from severe attacks not unlike those of ague, in the course of which the temperature rapidly rose to 105° F. In the afternoon it sank to the normal human temperature of 98° or 99° F. The cause of this remarkable symptom is still somewhat obscure; it has completely resisted the action of quinine and other antiperiodics as well as salicylic acid, aconite, and other approved lowerers of temperature. It is probably due to ulcerative endocarditis slowly advancing.¹ The most remarkable part of the case is that it causes the patient no suffering whatever. His mind is clear, and except the feeling of chilliness during the period of heat, he makes no complaint. He is able to take interest in the determinations which I proceed to give.

¹ This diagnosis subsequently proved to be correct on post-mortem examination.

It occurred to me that this unusual range of daily temperature (7° F.) afforded the opportunity I had long been seeking. But it was some time before I could arrange suitable apparatus for its examination. A hospital ward is an awkward place for Wheatstone's bridge and delicate galvanometers. Moreover I had before found that from the peculiar conditions of the human body, the testing current, to produce accurate results, requires to be frequently reversed, for fear of opposition currents of polarisation. I am glad to see a confirmation of this observation in a verbal communication of Prof. Rosenthal to the Physiological Society of Berlin on April 13th.

It was partly to overcome this difficulty that I devised, at Mr. Preece's suggestion, a dynamometer for alternating currents, of which the general arrangement was described in 'Nature,' some time ago. It was also brought before the Physical Society at their June meeting in Oxford. Although severely criticised by some members of that learned body, it works extremely well, and may be, I hope, an addition to medico-electrical appliances. For the purpose of the present experiment I found that an ordinarily sensitive galvanometer, considerably damped by air-resistance, was sufficient, since by the zero methods of balancing, it is only necessary just to see the deflection before commutating; when balance is obtained, commutation has no effect on the needle of the bridge.

It would require more space than could probably be here afforded to give all details of the experiments, which moreover, by the courtesy of Capt. Douglas Galton, I hope to bring before the British Association of this autumn. But a brief summary of results is as follows:

On June 5th I reached the ward at 9.40 a.m. The rigor had begun at 8.30 and was beginning to decline; I had time, however, for the following determinations:

9.40	.	.	.	.	R. 4140 ohms.
9.55	.	.	.	.	„ 3470 „
10.10	.	.	.	.	„ 2900 „

These measurements were taken with a very small E.M.F. of about 9 volts. On June 9th I succeeded in reaching the ward during the beginning of the rigor, and took the following measurements, this time with corresponding temperatures:

10.30 a.m.	.	Temp. 102.4°	...	R. 4550
10.40	„	„ 104.2°	...	„ 4630
10.50	„	„ 104.2°	...	„ 4930

At this point the rigor, temperature and resistance began to descend. I visited the patient again at

2.15 p.m.	.	Temp. 103°	...	R. 2300
-----------	---	------------	-----	---------

The apparatus in these observations was left untouched, so as to prevent any accidental change. The measurement was made with a double E.M.F. to those preceding, namely, 18 volts. I determined on each occasion the resistance of the leads and terminals, which I found to be on each occasion 2 ohms.

I cannot help thinking that the difference, which is as nearly as possible twice the smaller amount, is too great to be accounted for by any instrumental error, and that the human body, in spite of its large amount of liquid constituents, follows a similar thermal law of resistance to that influencing solid conductors, though in a very much higher ratio.

Only one other point requires comment, namely, the mode of making contact between the body and the testing apparatus. Prof. Rosenthal in the communication quoted above draws attention to the high insulating powers of the epidermis. In the above experiment I passed the current through the two legs, from one foot to the other, in alternate directions. The feet were previously soaked in salt and water; two large pans containing about a quart of brine each were then placed under the feet, and in each was immersed a plate of copper five inches square connected with the bridge by stout cables. I have found in other experiments that after half an hour the resistance ceases to decrease, and in this experiment it actually increased to the amount of 480 ohms. The whole foot was immersed, its sole resting directly on the copper plate. I have two other methods of making contact in use. The first consists of rubbing the skin with the oleate of mercury; which to the diffusion power of the oleic acid adds the conductivity of its base, and then immersing the part in metallic mercury. The other consists of inserting small silver claw-forceps, known to surgeons as “*serrefines*,” through the epidermis into the tissue below. This is rather painful, but not more so than I find medical students eager in the pursuit of knowledge can and will easily undergo.

III.¹

The fact that the note on this subject inserted in "Nature," June 14th, p. 151, was copied *in extenso* by the 'Electrical Review,' by the 'New York Electrical World,' and I believe by some other papers, as well as the fragmentary way in which these observations must of necessity be obtained, encourages me to ask for a little further space. This is the more pardonable as the writer in the former paper, in two editorial articles which he founds on my observations, shows ignorance and misconception of certain physiological facts involved in them—a misconception the correction of which by myself he does not think fit to publish.

On August 23rd, during my visit to the ward, it became obvious that a hopeless and incurable case of renal disease was rapidly sinking. It occurred to me that the patient, being in a state of uræmic drowsiness almost amounting to coma, there would be no inhumanity in adding small electrical currents to the other stimulants which as a last chance we were sedulously administering. I accordingly immersed his feet, which were rapidly getting cold, in hot baths of salt and water connected with Wheatstone's bridge. This and the brandy caused a decided rally, and the temperature became normal, viz. 98° F. The resistance then taken was 1100 ohms from one foot to the other. At 3 p.m., however, he rather suddenly relapsed, his hands and nose becoming cold. The following series of observations was taken :

2.55 p.m.	Temp. 98°	.	.	.	1100
3.0	„	.	.	.	900
3.5	„	.	.	.	870
3.7	„	.	.	.	850
3.12	„	.	.	.	840
3.13	„	.	.	.	820
3.22	„	Temp. 95°	.	.	800

We concluded that death was imminent, and I ceased the experiment, intending to renew it after the event. But on returning to the ward at 4.36 I found him somewhat better

¹ "Second Note on the Electrical Resistance of the Human Body." 'Nature,' September 13th, 1883.

and warmer. I applied the large leaden poles, to which I will refer presently, to both feet, so as to reduce the resistance to a minimum. The following remarkable series of resistances was obtained. The thermometer,¹ being found too slow in its action to follow the flickerings of the expiring lamp of life, was not used, the hand applied to the skin being quite competent to detect the great changes of surface heat :

4.36 p.m.	.	.	.	.	.	640
4.40 „	.	.	.	.	.	600
4.45 „	.	.	.	.	.	570
4.50 „	(rally)	.	.	.	.	750
4.55 „	(relapse)	.	.	.	.	700
5.0 „	(great rally)	.	.	.	.	770

He was still very cold, but began to ramble in his usual incoherent way (having been slightly deranged for several years), and I therefore left him for the night. On returning next morning early I found he had died an hour and a half later. Had I not been greatly fatigued myself, I should have stopped to secure an observation during post-mortem refrigeration, and before the access of rigor mortis. As it was I found the corpse in full state of rigidity. We managed to have the testing apparatus set up by 12.30, and without any great disturbance of the body I applied the leaden poles.

After some preliminary tests I obtained two excellent observations with reversed currents, and found them both exactly alike at 1150 ohms.

Then came the last experiment with which I now have to trouble you, namely, the question of skin resistance. A tremendous hubbub has been made about this since the time of Duchenne. I believe it has been enormously exaggerated. My anonymous critic of the 'Electrical Review,' quaintly says: "We *most of us*" (*sic*) "know the effect of keeping the feet in salt and water, or water alone" (he does not name soap and water!) "for any length of time. The skin turns white and swells, *enlarging the pores* (*sic*); indeed nearly the whole of the outside skin is of a spongy nature." I need not prolong the quotation, because I simply deny his facts, except where foot-

¹ In the axilla. I hope to use surface thermometers on a future occasion. In my last paper, the axillary temperature obviously lags behind that of the extremities.

washings have been "like angels' visits" &c., &c. The carefully-prepared epidermis of my patients is entirely free from this hypothetical and inaccurately stated cause of error. So I hope is mine; indeed I feel the full value of the implied limitation of the cautious phrase "most of us." Seriously speaking, it is too bad that an observer of average capacity, and I hope moderate honesty, should be accused of such elementary blunders on mere *a priori* grounds. Now for fact: Before going to the deadhouse I had provided myself with two silver needles, used for the electro-puncture of aneurisms, and intended to convey a very strong coagulating current from a powerful battery. I inserted one of these to the depth of three inches into the plantar muscles of each foot of the corpse, leaving everything else untouched. I expected the enormous reduction of resistance above-named. To my surprise the Wheatstone bridge gave 1200 ohms in either direction of current, or 50 more than with large lead and salt-water electrodes. This alleged skin resistance is then only true in the dry state, and is easily conquered by very simple means. Cases of diabetes have been cited in confirmation of this supposed resistance, and it has been explained by the peculiar dryness of the skin in this complaint. A patient now in my ward, though a tall, emaciated man with long spindle shanks, only gives 1340 ohms from foot to foot, with either salt-water baths, or with the lead electrodes as here described. This is rather under than over the average.

One word as to the lead electrodes themselves, and the manner of using them. The intelligent and kind lady nurses of our hospital, whom I like to call by their grand old name of "sisters," and who throughout this inquiry have seconded me in the most self-sacrificing way, are instructed to get ready certain patients for me each morning. The process consists in wrapping both hands and feet in coarse flannel saturated with strong warm brine for an hour before the experiment. Sometimes the process so graphically described by my commentator occurs, and is dealt with accordingly. I then proceed to wrap the members one by one in a surgical covering of flannel soaked in the same conducting solution. Over this I fold, also in surgical fashion, a strip of thin sheet lead about eighteen inches long, and one and a half inches broad. On the top of all is an ordinary spiral bandage, which moulds the whole to the shape

of the limb, and squeezes out superfluous fluid. An indiarubber covered wire leads to my testing table. I may add that each hand or foot is separately deposited on one of the vulcanised rubber waterproof sheets commonly used in the wards, and which I find to be excellent insulators. The first few observations are commonly rejected; always if they show any suspicion of diminishing. But after even half an hour's maceration this is rarely the case. Between every two observations I put the patient himself on short circuit, to discharge any currents of polarisation. Every measurement is at least double, and made with currents in opposite directions.

In conclusion I may remark first, that this, like my former note, only deals with part of a larger inquiry; and secondly, that the results above stated were open to all comers, and were carefully watched by Dr. Percy Smith, Dr. Shepherd, and others of my colleagues and pupils.

FRANK THEED TWINING, M.A.,

M.B. CANTAB., M.R.C.S.

FRANK THEED TWINING died of phthisis at Homerton Fever Hospital on September 14th, 1883. He was born at Parbold Hall, near Wigan, on August 24th, 1848, and educated at Christ's Hospital, where he gradually made his way to the top of the school, became a "Grecian," and gained an exhibition of £80 a year for four years tenable at Cambridge. He entered at Downing College, and took the degrees of M.A. and M.B. After leaving the university he became a student at St. Thomas's Hospital, where he later held the post of house physician. He was also resident clinical assistant at Victoria Park Hospital for Diseases of the Chest, and assistant medical officer at Stockwell Fever Hospital. He subsequently went for some months to Vienna, and in 1876 he was appointed assistant medical officer to the Homerton Fever Hospital, where he remained up to the time of his death.

From a very early period of his life he had suffered more or less from deafness, and this gradually increased to such an extent as to interfere most seriously with his prospects as a medical man. The external auditory meatus was so blocked by exostoses that the tympanic membrane, if it existed at all, could not be seen. At one time he contemplated the advisability of having an operation performed for his relief, but finally determined to leave things as they were.

In the early part of his career Twining was a most enthusiastic student of medicine, and being endowed with much ability, powers of accurate observation, and a sound judgment,

he succeeded in making himself an accomplished and well-read physician. The difficulties as regards auscultation and percussion, which his deafness placed in his way, were largely overcome by the keenness of his other senses, and the shrewdness of his observation, so that his diagnosis, even in cases of thoracic disease, was usually in the main correct. But in the later years of his life the defect in hearing increased so rapidly that he felt that he could hardly succeed in the ordinary practice of his profession; and it is probable that it was this conviction which led him to devote himself to the work of the Homerton Fever Hospital. There a distinguished and useful career was open to him, had not his deafness told against him in yet other ways. Being unable to hear ordinary conversation without great difficulty, he gave up society altogether, and rarely left the hospital.

The want of exercise and recreation which this entailed told seriously upon his health, and the loneliness of his life brought into relief eccentricities which he always possessed to some extent, but which had hitherto only added a raciness and interest to his character.

In the spring of 1882 the writer of this notice was asked by Dr. Collie, medical officer of the Homerton Fever Hospital, to go and see Twining as he was ill. He had a cough and considerable shortness of breath, but he declined at first to be examined. He yielded, however, to the wish of Dr. Collie, for whom he always expressed the highest esteem and friendship, and he was then found to be suffering from general bronchitis and pleurisy with effusion on the right side. From this he slowly, but probably only partially, recovered, and during the last few months of life his cough returned and he rapidly emaciated and finally died somewhat suddenly while asleep. Twining's deafness undoubtedly blighted, at least indirectly, his prospects in life, and led to his decline in health; but it never altered the genuine honesty and chivalrous kindness of his character.

He was a man of strong likes and dislikes; but though the staunchest of friends he never was a bitter enemy. Without being in the possession of much wealth, he was always ready to give; and, as a lady who was once a "Sister" at St. Thomas's and much attached to him truly observed, "it was

easier for him to do a kindness than to leave it." The writer is acquainted with a medical man who during his student days happened to be in want of money. Twining knew it and lent him a considerable sum. When he subsequently came to repay the loan, Twining requested him not to do so, but asked him to watch for some other student who might chance to be in difficulties, and to hand it over to him.

Nor is this an isolated instance of his generosity; his life abounded in acts of disinterested thoughtfulness for others. A friend of his, with whom he once made a pleasure trip, says that he was a most charming and considerate travelling companion; that he used to find out in casual conversation with him what he wished to do and where to go, and then propose on the following day a "plan of his own" embodying the wishes of his friend.

It is needless to multiply these instances of what were but the commonplace acts of his life, and we shall close this obituary notice with the following:—In a hospital to which Twining was attached lay a man who was very ill and who supposed himself to be dying. He had a great desire to see his wife, but as it was late in the night a difficulty arose about finding a messenger. Twining immediately tramped off some miles to fetch her.

This short account of the attainments, character, and of a few of the incidents in Twining's life will suffice to show what manner of man he was, and to prove that had he not been overwhelmed by an infirmity against which he long manfully struggled, he would have lived to be as distinguished a medical man as he was up to the moment of his death an honest, kind-hearted, and chivalrous gentleman.

S J. S.

REPORT OF

THE OBSTETRICAL DEPARTMENT

FOR 1882.

BY W. A. DUNCAN, M.D.

THE RESIDENT ACCOUCHEURS FOR THE YEAR WERE DRS. W. A. DUNCAN AND
T. D. ACLAND, MESSES. A. E. WELLS AND G. F. COOPER.

FROM the 1st of January, 1882, to the 31st of December, 1882 (both dates inclusive), 2181 women were attended. Of these, 2158 resulted in single births and 23 in twins. There were 22 cases of abortion among the single births and 2 among the twin cases.

In the following table the presentations of the children are classified :

	Single births.	Twins.	Total.
Vertex	2085	34	2119
Breech	27	5	32
Arm and shoulder	3	0	3
Head and hand	7	1	8
Footlings	20	4	24
Face and forehead	5	0	5
Feet and hands	1	1	2
Funis	6	1	7
Funis and shoulder	1	0	1
Funis and vertex	1	0	1
Funis and foot	2	0	2
	<u>2158</u>	<u>46</u>	<u>2204</u>

Of the 2181 cases attended,

319 were 1st labours.	26 were 11th labours.
360 „ 2nd „	10 „ 12th „
296 „ 3rd „	14 „ 13th „
293 „ 4th „	7 „ 14th „
252 „ 5th „	6 „ 15th „
182 „ 6th „	0 „ 16th „
153 „ 7th „	1 was a 17th „
115 „ 8th „	2 were 18th „
77 „ 9th „	
59 „ 10th „	
	<hr/>
	2172

In 9 cases the number of confinements is not stated.

The following table shows the number of women confined at each consecutive year of life; the youngest mother being 17, and the oldest 52 years of age.

At the age of	No. of women confined.	At the age of	No. of women confined.		
17	...	4	36	...	67
18	...	33	37	...	45
19	...	74	38	...	52
20	...	101	39	...	43
21	...	120	40	...	53
22	...	139	41	...	24
23	...	153	42	...	23
24	...	141	43	...	10
25	...	123	44	...	8
26	...	148	45	...	1
27	...	127	46	...	3
28	...	162	47	...	0
29	...	118	48	...	0
30	...	156	49	...	0
31	...	72	50	...	0
32	...	74	51	...	0
33	...	73	52	...	1
34	...	76			
35	...	66			
					<hr/>
					2177

In 4 cases the ages of the mothers are not stated.

FORCEPS CASES.

The forceps were used in 58 cases. The reasons are stated below :

Delay at the brim . . . 39	{ 14 from contracted pelvis. 23 „ inertia. 1 „ rigidity of cervix. 1 „ a large head.
Delay at the outlet . . . 4	
Tedious labours . . . 6	
Rigidity of soft parts . . . 4	
Prolapse of funis . . . 4	
Delay of after-coming head . 1	
	<hr/> 58

The percentage of all the cases which required the use of forceps was 2·2.

Of these forceps cases, 20 were primiparæ (34·5 p.c.).

The percentage of all the cases of *primiparæ* requiring the use of the forceps was 6·27.

The perinæum was lacerated in 11 of the 58 forceps cases ; 4 of these being primiparæ.

In 12 of the cases the forceps had been applied on former occasions, and in 1 version.

Of the 58 children delivered by the forceps, 1 had right facial paralysis, which soon disappeared, and 8 were stillborn, 3 of the latter being in primiparæ.

CASES OF VERSION.

Podalic version was resorted to in 12 cases for the following reasons :

		No. of children stillborn.
Placenta prævia 4	...	3
Shoulder presentation with prolapsed funis . 2	...	2
Hand and foot 2	...	0
Arm pulled down by midwife; shoulder firmly impacted in pelvis 1	...	1
Arm with funis 1	...	1
Prolapsed funis in contracted pelvis . . . 1	...	1
Prolapsed funis with vertex 1	...	1
	<hr/> 12	<hr/> 9

In 1 case (placenta prævia) the mother died of septicæmia on the tenth day after delivery; in all the remainder the mothers made a good recovery.

PLACENTA PRÆVIA.

Six cases occurred during the year, the particulars of which are stated below :

No.	Age.	Confinement.	Sex.	Whether placenta prævia was partial or central.	Treatment.	Result to Mother.	Result to Child.
2388	28	6th	M.	Central	Os uteri only partly dilated; much hæmorrhage; dilatation with Barnes's bags; introduction of hand; separation of placenta; delivery by podalic version	Good	Stillborn, premature (7 mos.)
2398	27	4th	F.	Partial	Separation, binder, ergot	"	Living.
1844	28	6th	M.	"	"	"	"
2916	29	5th	F.	"	Podalic version	Septicæmia, death	Stillborn.
888	21	3rd	F.	"	Separation; rupture of membranes; podalic version	Good	"
1726	27	7th	M.	"	Membranes ruptured; hand passed into uterus; left knee brought down and outside vulva; then ergot and uterine compression expelled rest of child	"	Living, somewhat asphyxiated at first

BREECH PRESENTATIONS.

The breech presented in 32 cases (5 of which were twins). This gives a proportion of 1 in every 68 labours.

Of the 27 single births 20 were males (of which 8 were living and 12 stillborn), 7 were females (of which 3 were living and 4 stillborn).

The percentage of stillborn children in the single breech cases being 59.

RUPTURED PERINÆUM.

The perinæum was ruptured in 34 cases; this accident occurred, therefore, once in every 64 cases (*i.e.* in 1·56 per cent.).

11 of the cases (including 4 primiparæ) were instrumental, giving a percentage of 0·5.

20 of the cases were primiparæ (*i.e.* nearly 7 per cent.).

INJECTION OF FERRIC CHLORIDE.

This was had recourse to in only one case of severe hæmorrhage after removal of the placenta. As neither ergot nor the injection of hot water were of use, a mixture of one part of Liquor Ferri Perchloridi Fortior to five parts of water was injected into the uterine cavity with immediate benefit. The patient recovered without a bad symptom.

Hot-water injections were used in 5 cases; 4 were successful, the fifth is noted above.

MATERNAL DEATHS.

Seven maternal deaths occurred during the year, or ·32 per cent.

The following table gives an outline of the cases. They are more fully given at the end of this report.

No.	Age.	Confinement.	Sex.	Result to child.	Causes of death.	Date of confinement.	Date of death.
No-maternity card	24	4th	Abortion (3 months)		Chloroform	May 24	May 24
1122	19	1st	—	—	? Acute yellow atrophy of liver	Died undelivered	June 16
649	38	4th	M.	L.	Ante-partum hæmorrhage; pneumonia	July 4	July 14
1644	21	2nd	M.	L.	Hæmoptysis	August 31	Sept. 6
1311	21	1st	M.	L.	Septicæmia	Sept. 29	Oct. 6
1964	40	11th	M.	L.	Adherent placenta; septicæmia	Nov. 8	Nov. 18
2916	29	5th	F.	S.	Placenta prævia; ante-partum hæmorrhage; septicæmia	Dec. 12	Dec. 22

Of the 2181 women delivered, 3 are reported as having subsequently suffered from phlegmasia dolens.

OF THE CHILDREN.—The number of births among the 2181 women attended during the year was 2204; there being 23 cases of twins. Of these, 1162 were males and 1033 were females; the sex of 9 of the children is not stated.

Among these there were 121 cases of stillbirths, being in the proportion of 1 stillbirth in 18.21 cases, or 5.49 per cent.

The following are the characters of the labours in which they occurred:

	Sex.		Total.
	M.	F.	
Natural	26	25	51
Breech	12	4	16
Footling	5	4	9
Vertex and hand	0	1	1
Vertex and funis	1	1	2
Placenta prævia	0	2	2
Premature births	14	6	20
Funis and foot	1	0	1
Funis and shoulder (version)	2	0	2
Arm presentation (version)	1	2	3
Uncomplicated forceps cases	3	2	5
Plural births	3	3	6
Prolapsed funis (version)	1	0	1
Ante-partum hæmorrhage	1	0	1
Cephalotripsy	1	0	1
	71	50	121

12 of the stillbirths showed signs of intra-uterine maceration. The history of these cases is as follows:

1. Mother had four previous children, all stillborn.
2. Placenta prævia.
3. Mother had 2 previous miscarriages.
- 4, 5, 6, 7, and 8. Not stated.
9. Syphilis.
10. Mother had a fall shortly before birth.
11. Mother had severe epileptic fit.
12. Premature birth (7 months).

Besides the stillbirths 26 children are reported as dying during the first week of their life.

TWIN BIRTHS.

The following table give particulars of the 23 cases:

No.	Age.	No. of con- finements.	Date of birth.	Sex.		Result to mother.	Result to child.		Presentations.		Condition of placenta.	Remarks.
				1st.	2nd.		1st.	2nd.	1st child.	2nd child.		
2363	33	9	Jan. 1	F.	F.	R.	L.	L.	Head	Head	Separate	Adherent placenta; post-partum hæmorrhage. Two amniotic sacs. Two amniotic sacs; second child born one hour after first. One amniotic sac. Two amniotic sacs.
2423	34	9	Jan. 16	F.	M.	R.	L.	L.	"	Feet	" Single	
446	30	4	March 2	M.	M.	R.	S.	S.	Abortion (4 months)	Abortion (4 months)	"	
313	27	5	March 25	M.	M.	R.	L.	L.	Head	Feet	"	
674	24	2	April 25	F.	F.	R.	L.	L.	"	"	"	Two amniotic sacs. Placenta adherent along one edge; two sacs; several previous miscarriages.
569	31	7	April 29	F.	F.	R.	L.	S.	Feet	"	Separate	
343	25	5	May 5	M.	F.	R.	L.	L.	Head	Head	"	
725	30	6	March 23	M.	F.	R.	L.	L.	"	Breech	"	
933	36	7	May 30	F.	M.	R.	L.	S.	"	Feet	" Single	Placenta adherent along one edge. Second child delivered by podalic version. Two amniotic sacs. Two amniotic sacs.
1199	38	18	June 16	M.	F.	R.	S.	S.	Abortion (5 months)	Abortion (5 months)	"	
812	35	7	July 26	M.	F.	R.	L.	L.	Breech	Head	Separate	
—	—	—	July 29	F.	F.	R.	L.	S.	Head	"	Single	
1427	29	6	Aug. 25	F.	M.	R.	L.	L.	Breech	Hand & feet	Separate	Two amniotic sacs. Two amniotic sacs.
1378	34	9	Sept. 3	M.	M.	R.	L.	L.	Head	Feet	"	
1040	33	7	Sept. 9	F.	M.	R.	L.	L.	Feet	Breech	" Single	
1693	40	7	Sept. 24	M.	F.	R.	L.	L.	Head	Head & hand	—	
1356	28	1	Oct. 12	F.	F.	R.	L.	L.	"	Funis	—	Two amniotic sacs; first child born before obstetric clerk's arrival.
1582	33	2	Oct. 19	M.	M.	R.	L.	L.	"	Head	—	
1648	30	8	Oct. 26	M.	M.	R.	L.	L.	"	"	Separate	
1653	21	1	Oct. 30	F.	M.	R.	L.	L.	"	"	Single	
No card	28	6	Dec. 6	M.	M.	R.	L.	L.	" ?	"	"	Two amniotic sacs; first child born before obstetric clerk's arrival.
1629	26	6	Dec. 7	F.	F.	R.	L.	L.	Head	Breech	"	
2918	34	5	Dec. 29	F.	M.	R.	L.	L.	"	Head	Separate	

The placentæ of the twin births were separate in 10 cases and single in 9; in 4 the condition is not stated.

The twin children were—

In 6 cases, both males;
 „ 6 „ „ females;
 „ 11 „ male and female.

Cases of Maternal Deaths.

1. "*Abortion; hæmorrhage; death from chloroform.*"

Mrs. A—, æt. 24, when three months advanced in her fourth pregnancy, began on May 23rd to have bearing-down pains. Next morning (24th) hæmorrhage set in, and patient passed what her mother thought was foetal product (this was unfortunately thrown away). A doctor was called in, and he advised them to apply at the hospital. When the obstetric clerk arrived he found the woman had lost a good deal of blood, and that hæmorrhage was still going on, so sent for the resident accoucheur, who found the patient, a healthy-looking woman, in fairly good condition, with a good pulse. As the hæmorrhage continued, he endeavoured to pass his finger into the uterine cavity in order to clear away any remaining foetal product, but found this was impossible owing to the patient being very sensitive and restless. Having found the heart sounds normal, he proceeded to place her under the influence of chloroform by pouring between one and two drachms on to a piece of lint. The patient had been inhaling it quietly for three or four minutes when she suddenly sat up in bed, struggled as it were for breath, and fell back dead. Artificial respiration, subcutaneous injection of five minims of liquor ammoniæ, stimulation of the heart by wet towels and also by the galvanic battery for fully two hours, were unavailingly had recourse to. A post-mortem examination was not obtained.

2. "(?) *Acute yellow atrophy of liver.*"

No. 1122. Mrs. P—, æt. 19, when nearly at full term in her first pregnancy, went on June 12th, thinking she was in labour. She was found to be suffering from vague and irregular pains in the abdomen, which first came on the previous evening. On examination there were no apparent uterine contractions; the os uteri was high up and closed.

13th.—Similar pains; slept little during night; still no signs of uterine action. Tongue clean, appetite bad, some nausea and vomiting of food, mucus, and bile. Some epistaxis. Complains of headache. Skin quite cool.

14th.—Pains continue, are now more severe, and localised in hepatic region; tenderness over liver. Slight jaundice; liver dulness normal. Bowels have not acted for three days, so simple enema given, which brought away a large quantity of normal fæces, and patient for some hours seemed easier and free from pain. Tongue furred, appetite bad, some sickness. Urine is said to have been of deep yellow colour (not seen). Some delirium; patient restless and tossing about. Os

uteri the size of a shilling, but no pain other than that in hepatic region, which came on in paroxysms of no great severity about every twenty minutes.

15th.—Evidently much worse. Pain and tenderness over liver greater; jaundice deeper; no apparent diminution of hepatic dulness; no appetite; brown fur on tongue. Pulse 140. Temperature normal. More restless. Uterus in same condition. Ordered a hypodermic injection of a quarter of a grain of morphia, and six hours later a grain of Pulv. Opii was given by the mouth, and a saline mixture every four hours.

16th.—Slept a little. Pulse 150. Temperature normal. Delirium replaced by stupor, from which patient could for a short time be roused. Pupils contracted. Died this evening, having remained in same condition all day. Previous to death passed no urine for twelve hours. Post-mortem examination not obtained.

3. "*Ante-partum hæmorrhage; pneumonia.*"

No. 649. Mrs. J—, æt. 38, had severe accidental hæmorrhage for three days prior to her delivery, which took place on July 4. The labour was natural, but here was much exhaustion immediately after. The obstetric clerk most unaccountably neglected to acquaint the resident accoucheur with the facts of the case; nor, indeed, did he ask for advice until eight days later (July 12th). When the resident accoucheur visited the patient he found her unconscious, with a feeble running pulse, dulness and fine crepitation at the base of the right lung. Notwithstanding the immediate subcutaneous injection of ether, with free stimulation, &c., she sank exhausted on July 14th.

4. "*Phthisis; hæmoptysis.*"

No. 1644. Mrs. R—, æt. 21, was admitted into Christian Ward, suffering from phthisis. She was far advanced in her second pregnancy. Labour set in on August 31st; was perfectly natural and easy. Six days after (on Sept. 6th) she had a sudden and profuse hæmoptysis, which was immediately fatal.

5. "*Septicæmia; acute peritonitis.*"

No. 1311. Mrs. B—, æt. 21, primipara, was confined on Sept. 29; labour natural; placenta intact. Went on well until the third day (Oct. 2nd), when there was slight rise of temperature, with pains in the abdomen. Ordered milk, soda-water, ice; quiniæ sulphatis, gr. iij every three hours; vagina to be washed out twice daily with Condyl's fluid.

Oct. 3rd.—Much the same. To continue treatment.

4th.—Temperature 104.4°; pulse 160, wiry; profuse perspirations; respirations quick and thoracic; vomiting and diarrhœa; abdomen tender on pressure and tympanitic. Hot fomentations ordered.

5th.—Temperature 103.8°; pulse 160; general condition the same. No sloughy patches about vulva or vagina. Ordered beef tea and an ounce of brandy every three hours.

6th.—Much worse; feeble; delirious. Vaginal discharge very offensive. Temperature 105.6°; pulse 160; respiration 52. Has only passed ten ounces of urine in the last 48 hours; catheter introduced and five ounces only drawn off. Ordered half an ounce of brandy every hour. Died at 8.30 p.m.

6. "*Adherent placenta; septicæmia.*"

No. 1964. Mrs. L— was delivered of her eleventh child on Nov. 8th. Labour natural. The placenta not coming away the resident accoucheur was sent for. On arrival he put the patient under the influence of chloroform, and on introducing his hand into the uterine cavity found the placenta firmly adherent all over its attachment. As much as possible was carefully peeled off, but the patient's pulse became so feeble that he was compelled to desist before removing all. The uterus was syringed out twice daily with Cond's fluid, and quinine given internally, but septicæmic symptoms set in two days later, and the woman died ten days after delivery.

7. "*Placenta prævia; ante-partum hæmorrhage; septicæmia.*"

No. 2916. Mrs. B—, when eight months advanced in her fifth pregnancy, began to suffer from hæmorrhage on December 12th. This continued more or less constant for ten days before a midwife was called in, who, on seeing the condition the woman was in, at once sent off to the hospital. On the arrival of the resident accoucheur, he found the patient lying on a mattress soaked with blood and very offensive. Vaginal examination showed the os uteri fairly dilated, partial placenta prævia, with foot and hand presenting. He separated the placenta, and effected delivery by podalic version. There was no further hæmorrhage. The following day decided symptoms of septicæmia had set in, of which the patient died on the 22nd (ten days after delivery).

Case of Cephalotripsy.

Mrs. J. S—, æt. 39, was admitted into Adelaide Small Ward on January 17th, 1882, with a very contracted rachitic pelvis, in order to have labour brought on (she being eight months pregnant).

Family history.—Three brothers alive and healthy; average sized men. One sister alive; is only 53½ inches in height; has been married fifteen years; has had seven children; the first two were born alive at full term; the last five have had to be extracted. In 1881 had labour brought on at five and a half months, the doctors having told her that she could not bear a living child at full term.

Previous history.—Catamenia commenced when æt. 19; regular since; married two and a half years; no child or miscarriage. Last period ended on May 17th, 1881.

On admission.—Patient is a healthy-looking, well-nourished, but very short woman, with the following measurements:

Height	52½ inches.
Symphysis pubis to sacrum	5¼ "
Between anterior superior iliac spines	10 "
Between posterior superior iliac spines	2¾ "
Between centres of iliac crests	9¼ "
Between anterior superior iliac spine of one side and posterior superior iliac spine of the other side	7½ "

On vaginal examination the outlet of the pelvis is found to be fairly roomy, but the inlet and cavity are much diminished by the projection forwards of the upper part of the sacrum. The measurement from the promontory of the sacrum to the under surface of the symphysis pubis ("inclined conjugate") being only $2\frac{1}{2}$ inches.

At 8 p.m. the resident accoucheur (Dr. Duncan) introduced a soft catheter between the membranes and the uterine wall. Feeble pains ensued for three hours and then passed away. After this there were no more pains, so the catheter was removed at 3 p.m. next day (Jan. 18th), the os uteri being large enough to admit a finger. The same evening, sufficient dilatation having been obtained by means of Barnes's bags, Dr. Duncan perforated the fœtal head, and broke up the brains with a blunt hook. The craniotomy forceps were applied two or three times, but even with the fullest amount of traction force justifiable failed to deliver, so finally recourse was had (with success) to the cephalotribe. During extraction the perinæum was ruptured, and, after the placenta came away in about twenty minutes, the torn edges were united with silver sutures. There was no loss of blood, and the patient was under chloroform during the operation, which lasted nearly two hours.

Metritis, followed (a fortnight later) by pneumonia, retarded the patient's recovery. She was discharged cured on March 2nd.

MEDICAL AND SURGICAL REPORTS.

THE NEW YORK PUBLIC LIBRARY

MEDICAL REPORT.

1882.

BY WALTER BAUGH HADDEN, M.D. LOND., M.R.C.P.,
MEDICAL REGISTRAR.

TABLE I.—*General Statement of Medical and Surgical Patients.*

		Males.	Females.	Total.
Number of patients in Hospital, Jan. 1st, 1882	...	224	159	383
" " " Dec. 31st, 1882	...	191	183	374
" " discharged or died during 1882:				
Cured ...	...	1153	1027	2180
Relieved ...	...	798	554	1352
Unrelieved or other causes	...	81	87	168
Died ...	...	271	175	446
		2303	1843	4146
Average number of days of each medical patient's stay in hospital—31·94.				
" " surgical		"		30·3.

TABLE II.—*General Medical Statement.*

Number of Medical Beds	...	...	...	...	192
Number of patients in Medical Wards, Jan. 1st, 1882	...	Males.	Females.	Total.	
" " admitted during the year 1882	...	794	921	1715	
Total	...	895	976	1871	
" " in Medical Wards, Dec. 31st, 1882	...	72	81	153	
" " treated to a termination during 1882	...	823	895	1718	
" " discharged or died during 1882:					
Cured	...	333	376	709	41·27
Relieved	...	269	339	608	35·39
Unrelieved or other causes	...	57	66	123	7·16
Died	...	164	114	278	16·18
Total	...	823	895	1718	100·00
Average number of days of each patient's stay in hospital—31·94.					

TABLE III.—General Table of Diseases.

DISEASE.	Number of cases.		Age.										Duration of residence.						Cured.		Re- lieved.		Unre- lieved.		REMARKS.				
	Total.	M. F.	Under 5	5-10	10-20	20-30	30-40	40-50	50-60	Above 60	Under 1 week	Wks. 1-2	Wks. 2-4	Mths. 1-2	Mths. 2-4	Mths. 4-6	Mths. 6-9	Mths. 9-12	Above 1 year	M.	F.	M.	F.	M.		F.			
I. GENERAL DISEASES.																													
Rötheln . . .	1	1	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	A student at the hospital.	
Measles . . .	12	5	7	3	6	2	...	...	...	...	...	3	3	5	1	...	...	...	...	...	5	7	...	...	...	...	4 cases arose in hospital; 1 was a nurse. Age not stated in 1.	
Variola . . .	1	...	1	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	Varicellous eruption preceded by a measles rash.	
Varicella . . .	4	3	1	4	...	...	...	...	...	...	...	1	1	2	...	...	...	...	...	...	3	1	...	...	...	...	3 cases arose in hospital.	
Scarlet fever . . .	30	15	15	7	13	6	2	2	...	...	2	1	5	18	3	1	...	...	...	...	14	12	...	...	...	1	3	13 cases arose in hospital.
Enteric fever . . .	114	60	54	4	9	37	48	13	3	...	5	9	15	54	31	54	40	...	1	1	...	5	13	5 cases arose in hospital, 4 being nurses.
Febricula . . .	7	3	4	1	2	2	1	3	2	1	3	4	1	...	1 case was possibly enteric fever.
Erysipelas . . .	34	19	15	...	11	0	9	3	4	7	3	13	10	7	1	...	...	...	...	...	17	14	...	...	...	2	1	2 cases were readmissions. In 2 fatal cases there was chronic renal disease; in 1 intense congestion of right lung.
Pyæmia . . .	1	1	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	Inflammation of pericardium, pleura, and peritonæum; pus in right knee-joint.
Diphtheria . . .	24	10	14	17	6	1	...	...	...	...	10	1	11	2	...	...	...	...	...	...	5	6	...	...	...	5	8	Tracheotomy in 15.
Post-diphtheritic paralysis . . .	1	...	1	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	Paraplegia and internal strabismus.
Pertussis . . .	6	5	1	6	...	...	...	...	...	...	...	...	2	3	...	1	...	...	...	...	4	1	...	...	...	1	...	3 cases arose in hospital. Bronchitis and cedema of glottis in fatal case.
Parotitis . . .	1	1	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	Preceded by orchitis. The patient was a student.

TABLE III—continued.

DISEASE.	Number of cases.		Age.								Duration of residence.						Cured.		Re- lieved.		Unre- lieved.		Died.	REMARKS.		
	Total.	M. F.	Under 5	5-10	10-20	20-30	30-40	40-50	50-60	Above 60	Under 1 week	Wks. 1-2	Wks. 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Above 1 year	M. F.	M. F.	M. F.			M. F.	
II. DISEASES OF THE SKIN																										
Erythema nodosum	7	1	6	1	1	4	1	1	1	1	1	3	3	1	1	1	1	1	1	1	6	1	1	1	1 was a hospital maid.	
Urticaria	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	In 1 the eruption was general, in 3 limited to the face, and in 2 the legs were chiefly affected.	
Eczema	6	4	2	1	1	1	1	1	1	1	1	1	4	1	1	1	1	1	1	1	2	3	1	1	Eruption general in all.	
Ecthyma	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1 had had two previous attacks.	
Psoriasis	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	Transferred to surgical ward for hæmorrhoids.	
Ichthyosis	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	In fatal case there was acute erysipelatous inflammation of epiglottis and tissues around.	
Pemphigus	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1 case was a readmission. In 1 fatal case there were secondary growths in various organs.	
Molluscum fibrosum	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	No obvious cause discovered.	
III. DISEASES OF THE RESPIRATORY ORGANS.																										
Laryngitis	5	4	1	1	1	1	1	1	1	2	3	1	1	1	1	1	1	1	1	1	2	1	1	1	3 readmissions.	
Syphilitic disease of larynx	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1 case was a readmission. In 1 fatal case there were secondary growths in various organs.	
Carcinoma of larynx	5	5	1	1	1	1	1	1	1	2	3	1	1	2	1	1	1	1	1	1	1	2	1	2	No obvious cause discovered.	
Laryngeal dyspnoea	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1 case was a readmission. In 1 fatal case there were secondary growths in various organs.	
Acute bronchitis.	11	5	6	3	2	1	4	1	1	1	3	2	4	1	1	1	1	1	1	1	2	5	1	2	No obvious cause discovered.	
Subacute and chronic bronchitis	65	30	35	8	5	1	7	13	14	10	10	17	21	15	2	1	1	1	1	1	7	5	16	23	1	No obvious cause discovered.

Broncho-pneumonia	14	9	5	9	1	2	2	...	...	3	1	4	4	1	1	...	...	5	...	3	2	...	1	3
Acute pneumonia	67	53	14	6	3	17	20	6	10	4	1	8	9	3	...	...	...	44	11	2	1	...	7	2
Phthisis	70	42	28	...	1	5	24	23	15	1	1	4	13	22	16	11	3	...	...	21	14	4	3	17
Hæmoptysis	14	11	3	...	...	3	3	4	2	1	...	3	2	6	3	...	...	...	4	3	3	...	4	...
Pneumothorax	1	1	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...
Pyo-pneumothorax	1	1	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...
Pleurisy	28	16	12	2	2	7	6	5	2	4	...	5	13	6	3	...	...	1	5	10	9	1	...	2
Empyema	7	5	2	1	1	3	...	1	1	...	...	...	1	2	2	1	1	...	3	...	2	...	2	...
Intra-thoracic tumour	3	2	1	...	...	1	...	1	...	1	...	...	1	2	...	...	...	...	...	1	...	1	1	...
Paroxysmal dyspnea	1	1	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...
Pulmonary collapse	1	1	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...

1 fatal case was complicated with right pleurisy and catarrh of large intestine.

In 8 there was a strong suspicion of phthisis; mitral regurgitation in 2. No P.M. in 3 cases; in the other fatal case miliary tubercles with broncho-pneumonia and scattered cavities were found.

No P.M.

Left lung collapsed, containing two cavities opening into pleura; cavities in right lung; tubercular ulcers in intestine; lardaceous disease of liver, spleen, and intestine.

Affected the right side in 9, the left in 16, and both sides in 3.

5 on left side, 2 on right. Paracentesis in 5. In 1 fatal case caries of the right tenth rib and right petrous bone, with meningitis and other signs of pyæmia were found.

Suspicion of aneurysm in 1. In fatal case tumour also of left parotid gland.

No obvious cause discovered.

TABLE III—continued.

DISEASE.	Number of cases.		Age.										Duration of residence.						Cured.		Re- lieved.		Unre- lieved.		Died.	REMARKS.	
	Total.	M. F.	Under 5	5-10	20	30	40	50	60	Above 60	Under 1 week	Wks. 1-2	Wks. 2-4	Mths. 1-2	Mths. 2-4	Mths. 4-6	Mths. 6-9	Mths. 9-12	Above 1 year	M.	F.	M.	F.	M.			F.
IV. DISEASES OF THE ORGANS OF CIRCULATION.																											
Pericarditis . . .	5	2	3	2	1	1	1	1	1	1	...	1	2	1	1	...	...	...	...	...	1	1	2	...	1	...	2 cases were rheumatic. In the fatal case the effusion was purulent. Cavities of heart dilated, valves natural. 1 case was a readmission.
Adherent pericardium	1	1	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Angina pectoris . .	1	1	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...
Anginoid . . .	2	2	...	...	...	...	2	...	...	...	...	...	...	2	...	...	...	...	...	...	...	2	...	...	...	...	...
1. Heart.																											
Fatty degeneration of heart	4	4	...	...	...	...	...	...	4	...	2	...	1	...	...	1	...	...	...	...	...	4	...	...	...	...	3 readmissions. The patient was tapped several times. Chronic congestion of left lung, kidneys, and liver; collapse of right lung.
Hypertrophy of heart	1	1	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Malformation of heart	7	3	4	2	...	3	2	...	...	...	1	2	4	...	...	...	...	...	...	...	...	1	2	1	...	1	2
2. Valvular disease.																											
Mitral . . .	53	19	34	...	...	9	12	10	9	1	7	8	13	20	4	1	...	...	...	...	...	15	21	...	3	4	10
Aortic . . .	9	5	4	...	...	1	2	3	2	...	2	...	4	3	...	...	...	...	...	...	...	2	2	...	...	3	2
Mitral and aortic	32	22	10	...	...	3	8	9	4	5	3	3	4	6	11	7	...	1	...	...	...	11	6	...	11	4	There were 2 readmissions.
3. Vessels.																											
Thoracic aneurysm	12	10	2	...	...	...	...	4	7	1	3	...	2	3	2	2	...	...	...	...	...	6	...	1	...	3	2
Abdominal aneurysm .	1	...	1	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	No clinical history. Sac ruptured into sub-peritoneal tissue.
Arteritis . . .	1	...	1	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	Arteritis of right brachial; gangrene of fingers.

V. DISEASES OF THE DUCTLESS GLANDS.												
Goitre	1	1	1	1	1	1	1	1	1	1	1	1
Exophthalmic goitre .	2	2	1	1	1	1	1	1	1	1	1	1
Addison's disease .	1	1	1	1	1	1	1	1	1	1	1	1
Pigmentation of mesentery and omentum; both supra renals caseous.												
VI. DISEASES OF THE DIGESTIVE ORGANS.												
1. <i>Alimentary canal.</i>												
Stomatitis	1	1	1	1	1	1	1	1	1	1	1	1
Pharyngitis	1	1	1	1	1	1	1	1	1	1	1	1
Tonsillitis	26	10	16	3	2	5	14	2	12	7	7	9
Stricture of œsophagus	10	9	1	1	1	1	1	1	2	1	2	3
Dysphagia	1	1	1	1	1	1	1	1	1	1	1	1
Gastric catarrh	1	1	1	1	1	1	1	1	1	1	1	1
Dyspepsia	31	18	13	1	9	7	5	3	9	7	10	4
Gastric ulcer	16	1	15	1	3	9	2	1	1	1	6	5
Hæmatemesis	11	3	8	1	6	3	1	1	1	3	5	2
Vomiting	3	3	3	2	1	1	1	1	2	1	1	1
Carcinoma of stomach	10	7	3	4	2	4	1	1	1	4	3	1
Pyloric obstruction .	1	1	1	1	1	1	1	1	1	1	1	1
Diarrhœa	11	8	3	3	1	1	2	1	3	4	2	2

Systolic murmur at apex and base.

Stomatitis in 1; mental derangement in 1.

All the cases probably due to malignant disease.

Probably due to malignant disease of larynx.

Hæmatemesis in 5; anæmia in 3; delirium in 1.

Probable gastric ulcer in 3; alcoholism in 2; metrorrhagia in 1.

Suspicion of malingering in 1; probable dyspepsia in 1.

1 case (unrelieved) was transferred to surgical ward, and died after removal of the pylorus.

Pylorus thickened, but no evidence of new growth.

Vomiting in 4; convulsions in 1; hæmorrhoids in 1; 1 was dysenteric.

TABLE III—*continued.*

DISEASE.	Number of cases.		Age.										Duration of residence.						Cured.		Re- lieved.		Unre- lieved.		Died.	REMARKS.	
	Total.	M. F.	Under 5	5-10	10-20	20-30	30-40	40-50	50-60	Above 60	Under 1 week	Wks. 1-2	Wks. 2-4	Mths. 1-2	Mths. 2-4	Mths. 4-6	Mths. 6-9	Mths. 9-12	Above 1 year	M. F.	M. F.	M. F.	M. F.	M. F.			M. F.
VI. DISEASES OF THE DIGESTIVE ORGANS (continued)—																											
Enteritis . . .	4	3 1	1	2	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	Old perityphlitis in 1 fatal case; ulceration of mucous membrane in 1. All contracted abroad; 1 was a readmission.	
Dysentery . . .	4	4	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	3	1	1	1	1	All contracted abroad; 1 was a readmission.	
Colic . . .	4	3 1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1 was a readmission.	
Constipation . . .	10	5 5	1	3	5	1	1	1	1	1	3	2	5	2	2	2	2	2	2	2	4	4	1	1	1	1	1 was a readmission.
Intestinal obstruction	11	9 2	1	1	2	1	3	2	1	1	4	3	2	2	2	2	2	2	2	2	3	1	1	1	5	1 was a readmission.	
Perityphlitis . . .	5	2 3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1 was a readmission.	
2. Peritoneum.																											
Acute peritonitis	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	No cause ascertained; probably septic.	
Subacute "	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	All non-fatal cases probably tubercular. There was effusion in 4. In 1 an abscess opened through the lungs. In the fatal case no distinct tubercles were made out.	
Chronic "	8	4 4	1 5	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1	2	3	1	1	1	1	1	1	1	1	3	2	1	1	All non-fatal cases probably tubercular. There was effusion in 4. In 1 an abscess opened through the lungs. In the fatal case no distinct tubercles were made out.	
3. Liver.																											
Cirrhosis . . .	19	13 6	6	5	5	5	5	5	5	5	1	2	5	6	3	2	2	2	2	2	7	5	1	1	6	There were 3 readmissions. 1 was a readmission; history of abscess in 1; 1 was probably tropical; no obvious cause in 1.	
Enlargement . . .	4	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	1	1	1	1	There were 3 readmissions. 1 was a readmission; history of abscess in 1; 1 was probably tropical; no obvious cause in 1.	

TABLE III—continued.

DISEASE.	Number of cases.		Age.							Duration of residence.							Cured.		Re- lieved.		Unre- lieved.		Died.		REMARKS.		
	Total.	M. F.	Under 5	5-10	10-20	20-30	30-40	40-50	50-60	Above 60	Under 1 week	Wks. 1-3	Wks. 3-4	Mts. 1-3	Mts. 4-6	Mts. 6-9	Mts. 9-12	Above 1 year	M. F.	M. F.	M. F.	M. F.	M. F.				
VII. DISEASES OF GENI- TO-URINARY SYS- TEM—continued. Chronic nephritis	35	23	12	...	1	7	9	13	3	2	3	...	12	14	4	1	1	14	9	3	...	6	3	There were 3 readmissions; 2 were butchers, 4 painters, and 1 a plumber. The kidneys were granular in 8 fatal cases. Probably due to calculus in 2 cases.
Hæmaturia	5	2	3	1	1	1	2	...	...	...	...	1	1	3	...	...	...	...	...	2	2	1	...	...	...	1 was tubercular. The left kidney was affected in 3 cases, the right in 1. In 1 the organ was mov- able.
Pyelitis	2	2	...	...	...	1	...	1	...	...	...	...	1	...	...	...	...	...	...	...	2	...	...	...	...	The pain affected the right side in 4 cases, the left in 1, and both sides in 1.
Pyonephrosis	4	2	2	...	1	1	2	...	...	...	...	...	3	1	...	...	...	...	...	...	1	2	1	...	...	Yellow tubercle in both or- gans; tubercular disease of lungs.
Renal colic	6	5	1	...	...	3	2	1	...	...	2	4	...	...	...	...	...	...	2	1	3	...	...	...	...	The pain affected the right side in 4 cases, the left in 1, and both sides in 1.
Tubercular kidney	1	1	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	Yellow tubercle in both or- gans; tubercular disease of lungs.
Movable kidney.	1	1	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	Urine contained pus and a trace of albumen.
Oxaluria	1	1	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	In the fatal case pyelitis, suppu- rative nephritis, and mitral disease were found post- mortem.
Cystitis	5	...	5	...	...	3	1	1	...	...	1	...	2	2	...	...	...	...	1	...	2	...	1	...	1	...

Incontinence of urine.	1 ...	1 ...	1 ...								1 ...	The incontinence was nocturnal.
Pus in urine .	1 1 ...	1 ...	1 ...								1 ...	No cause to be made out from clinical notes; case imperfectly reported.
VIII. DISEASES OF THE NERVOUS SYSTEM. Acute meningitis Tubercular meningitis	1 1 ... 1 1 ...	... .. 1 ...	1 ... 1 ...								1 ... 1 ...	Tubercles also found in membranes of spinal cord; broncho-pneumonia.
Meningeal hæmorrhage	1 1 ...	... ..	... ..								1 ...	Hæmorrhage on left side; pulmonary emphysema.
Hemiplegia .	20 11 9 ...	... ..	1 3 5 6	2 ...	5 6 1 ...					8 7 1 2 1 ...	7 ...	on the right side, 13 on the left; aphasia in 6, all cases of right hemiplegia; double lateral sclerosis and ophthalmoplegia externa in 1; hemanæsthesia in 1; 2 were probably syphilitic. No P.M. in fatal case.
Cerebral hæmorrhage.	8 5 3 ...	... ..	1 2 1 4	6 1 1 ...							5 3	Hæmorrhage chiefly in left hemisphere in 4, in right hemisphere in 3; marked arterial disease in 5; cardiac hypertrophy in 4; renal disease in 4.
" softening	3 2 1 ...	... ..	1 1 ...	1 1 2 ...							2 1	In 2 the basilar artery was obstructed, giving rise to softening of the pons. In 1 there was softening of the fore part of the right optic thalamus and neighbouring parts.
" tumour.	8 6 2 ...	2 ...	2 3 1 ...								2 1 2 ...	1 3 were cases of cerebral syphilis.

Dementia . . .	1 ...	1 ...	... ..	... ..	... ..	... ..	... ..	... ..	... ..	... ..	... ..	... ..	... ..	... ..	... ..	... ..	... ..	Sent to parish Infirmary.
Other mental disorders	2 1 1	1 ...	... ..	1 1	... ..	1 ...	... ..	1 ...	... ..	1 ...	... ..	1 1	... ..	1 1	... ..	1 ...	... ..	1 was post-epileptic; 1 was sent to Bethlehem.
Paralysis agitans	1 1	1 ...	... ..	... ..	... ..	1 ...	... ..	1 ...	... ..	... ..	... ..	1 ...	... ..	... ..	... ..	... ..	... ..	Movements affected head, jaw, tongue, and lips.
Chorea . . .	25 6 19	1 9 14	1 ...	... ..	... ..	1 1 1 15	7 ...	... ..	... ..	3 17	3 2	... ..	... ..	... ..	... ..	... ..	... ..	1 readmission.
Choreiform movements	4 3 1	1 ...	1 ...	3 ...	... ..	1 ...	2 1	... ..	... ..	... ..	2 ...	1 1	... ..	... ..	... ..	... ..	... ..	Nerve-stretching in 1, a case of post-hemiplegic hemichorea.
Hysteria . . .	27 ...	27 ...	9 15	3 ...	... ..	1 10 7 3 6	... ..	... ..	... ..	... ..	15 ...	10 ...	2 ...	... ..	... ..	... ..	... ..	1 readmission.
Epilepsy . . .	23 13 10	... ..	10 5 4	2 1 1	... ..	7 8 5 2 1	... ..	... ..	... ..	3 ...	9 7 1 3	... ..	1 ...	... ..	... ..	... ..	... ..	1 readmission.
Abscess of cerebellum	2 1 1	1 ...	2 ...	... ..	... ..	1 ...	... ..	1 ...	... ..	... ..	... ..	... ..	1 ...	... ..	... ..	... ..	... ..	1 Abscess in right lobe of cerebellum, caries of right petrous bone, in both cases.
Bulbar paralysis.	2 2	... ..	... ..	2 ...	... ..	1 ...	1 ...	... ..	... ..	... ..	... ..	2 ...	... ..	... ..	... ..	... ..	... ..	1 readmission.
Cervical pachymeningitis	1 1	... ..	... ..	... ..	1 ...	... ..	1 ...	... ..	... ..	... ..	... ..	... ..	1 ...	... ..	... ..	... ..	... ..	Caries between sixth and seventh cervical vertebræ with pachymeningitis.
Paraplegia . . .	17 13 4	2 2 4 4	2 3 ...	4 ...	3 8	2 ...	... ..	2 1 4 2 3 1 4	... ..	... ..	... ..	... ..	... ..	... ..	... ..	... ..	... ..	No P.M. in 1 fatal case. In 2 others there was softening of the cord. Of the non-fatal cases 6 were probably due to caries, 2 were syphilitic, 1 a sequela of variola, and in 1 there was a suspicion of hysteria.
Locomotor ataxy	13 11 2	... ..	1 2 9	1 ...	2 ...	2 1 8	... ..	... ..	... ..	6 1 5 1	... ..	... ..	... ..	... ..	... ..	... ..	... ..	Apparently primary; history of injury.
Lateral sclerosis	1 1	... ..	... ..	... ..	1 ...	... ..	1 ...	... ..	... ..	1 ...	... ..	... ..	... ..	... ..	... ..	... ..	... ..	A typical case.
Anytrophic lateral sclerosis	1 ...	1 ...	... ..	1 ...	... ..	1 ...	... ..	... ..	... ..	... ..	1 ...	... ..	... ..	... ..	... ..	... ..	... ..	...
Disseminated sclerosis	7 4 3	... ..	2 4	... ..	1 ...	4 2	... ..	1 ...	... ..	4 3	... ..	... ..	... ..	... ..	... ..	... ..	... ..	...
Progressive muscular atrophy	4 3 1	... ..	1 1 2	... ..	... ..	2 2	... ..	... ..	... ..	2 1 1	... ..	... ..	... ..	... ..	... ..	... ..	... ..	1 readmission.
Local muscular atrophy	1 1	... ..	1 ...	... ..	1 ...	1 ...	... ..	... ..	... ..	... ..	1 ...	... ..	... ..	... ..	... ..	... ..	... ..	Atrophy of muscles of right lower extremity, probably due to injury of lumbar plexus.

TABLE III—continued.

[illegible]

Opium	4	3	1	...	...	3	1	...	3	1	...	1	...	1	...	2	...	Contracted granular kidneys in 1 fatal case; 1 was a case of chronic poisoning by subcutaneous injections of morphia; 1 died from a large dose of Tinct. camph. co.; 2 cases at least were suicidal.
Chlorodyne	1	1	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	Suicidal.
Camphor	1	1	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	Accidental.
Paraffin	1	1	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	Blood everywhere fluid, mucous membrane of pharynx, œsophagus, and stomach whitened.
Carbolic acid	1	1	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	1 suicidal.
Oxalic acid	2	1	1	...	...	1	1	...	...	...	...	...	1	1	...	...	...	Patient was advanced in pregnancy.
Nitric acid	1	1	1	...	...	1	...	...	...	...	...	...	...	1	...	...	...	Accidental.
Hydrochloric acid	1	1	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	White patches of membrane on tongue, pharynx, and œsophagus; superficial sloughing of mucous membrane of stomach.
Sulphuric acid	1	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Suicidal.
Phosphorus	1	1	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	Vomiting, purging, and collapse.
Salt beef	1	1	1	...	...	1	...	...	...	...	...	...	...	1	...	...	...	In 1, an accidental case, the poison was probably chloride of zinc; in 1, a suicidal case, the poison was either arsenic or phosphorous.
Doubtful	2	2	...	...	2	...	...	...	...	...	...	...	...	2	...	...	...

TABLE III—*continued.*

DISEASE.	Number of cases.		Age.										Duration of residence.							Cured.		Re- lieved.		Unre- lieved.		Died.		REMARKS.
			Under 5	5-10	10-20	20-30	30-40	40-50	50-60	Above 60	Under 1 week	Wks. 1-2	Wks. 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Above 1 year									
	Total.	M.	F.																M.	F.	M.	F.	M.	F.	M.	F.		
X. SURGICAL AND MISCELLANEOUS.																												
Immersion . . .	12	6	6	...	1	1	5	1	1	2	1	9	2	1	6	6	Most were accidental. 1 developed delirium tremens after admission.
Debility . . .	5	2	3	...	...	1	2	1	1	...	...	2	1	1	...	...	...	...	...	...	1	1	1	...	1	...	1 from over-lactation; 1 after ague; 1 after enteric fever.
Syncope . . .	2	1	1	...	...	...	...	1	...	...	1	1	1	...	...	...	...	...	...	...	1	1	...	...	...	...	1 due to want of food.
Emaciation . . .	1	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	No clinical notes; nothing found P.M.
Disease of vertebrae	2	1	1	...	...	...	...	1	1	...	...	...	1	...	...	...	1	...	...	...	...	...	1	...	...	...	Osteomyelitis of upper part of right humerus.
Osteomyelitis . . .	1	...	1	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	Acute periostitis of left humerus; pyæmia.
Acute periostitis . . .	1	...	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	transferred to surgical ward.
Lumbar abscess . . .	3	1	2	...	1	...	1	...	1	...	...	1	...	2	...	...	...	...	...	...	2	...	1	...	...	...	In the fatal case there was a malignant tumour of neck; no P.M. 1 was a case of strangulated femoral hernia, 1 of transposed viscera, 1 of diphtheritic ophthalmia, and 1 of impacted tooth in bronchus. The other cases presented no points of medical interest.
Otorrhœa . . .	2	...	2	...	...	1	1	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	2	...	...	...
Various . . .	22	9	13	2	2	8	2	1	1	4	2	5	7	4	3	3	3	8	3	2	2	3	1	

TABLE III—continued.

DISEASE.	Number of cases.		Age.										Duration of residence.								Cured.		Re- lieved.		Ure- thru.		REMARKS.
	Total	M. F.	Under 5	5-10	10-20	20-30	30-40	40-50	Above 50	Under 1 week	Wks. 1-2	Wks. 2-4	Mos. 1-2	Mos. 2-4	Mos. 4-6	Mos. 6-9	Mos. 9-12	Above 1 year	M. F.	M. F.	M. F.	M. F.	M. F.	M. F.			
XI. DISEASES OF THE FEMALE GENITALIVE ORGANS—continued.																											
Endometritis	21	21	10	9	2	1	6	10	4	1	6	10	4	1	6	10	4	1	20	1	20	1	20	1	Parametritis in 6; ante- flexion in 1; prolapse in 1; retroflexion in 2; abortion in 3; dysmenorrhea in 2; stenosis of cervix in 1; erosion of os in 1; vagi- nitis in 1; vulvitis in 1.		
Uterine polypus	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	In 1 fatal case the fibroid was in anterior wall, the cavity and walls of the uterus contained pus, the right ovary was converted into an abscess, and the organs were in a septicemic con- dition.		
" fibroid	15	15	1	4	8	1	1	1	1	1	3	4	3	4	3	4	3	8	3	1	8	3	3	3	In 1 fatal case the growth implicated the os and upper part of vagina. In 1, malig- nant disease of uterus, left ovary, liver, abdominal and cervical glands was found P.M.		
Malignant disease of of uterus	22	22	1	5	9	6	1	1	3	3	10	5	15	5	15	5	15	5	2	15	5	15	5	2	In 1 fatal case the growth implicated the os and upper part of vagina. In 1, malig- nant disease of uterus, left ovary, liver, abdominal and cervical glands was found P.M.		
Subinvolution	6	6	4	2	1	1	1	1	1	3	1	2	1	2	1	2	1	5	1	5	1	5	1	1	Metrorrhagia in all; ante- flexion in 1; retroversion in 1.		

Endocervicitis .	3	3	1	2					1	1					3	Laceration of cervix in 2; dysmenorrhœa in 2; metrorrhagia in 1.
Stenosis of cervix .	5	5		1	3	1				3	2				5	Dysmenorrhœa in 4; endocervicitis in 1; granular vaginitis in 1; pelvic contraction in 1.
Contracted os .	1	1							1						1	Obstructive dysmenorrhœa. Age not stated.
2. Ovaries.																
Chronic ovaritis .	2	2				2					2				1	9 were transferred to surgical wards; 1 was doubtful.
Sub-ovaritis .	2	2		1		1			1	1					1	Malignant disease of ovaries and great omentum, suppurative nephritis, fibroid of uterus.
Ovarian tumour .	12	12		4	4	2	1	1	3	4	2	1			11	
Carcinoma of ovaries .	1	1				1					1					2 were mole pregnancies. The abortion took place in hospital in all the cases.
3. Accidents of Pregnancy.																
Abortion .	6	6				2	4			1	3	1			6	Retroflexion in 1.
Metrorrhagia after abortion	4	4				2	2			1	2				3	Cephalotripsy was performed, the pelvis being much contracted.
Purulent abortion	3	3		1	1		1			1	1				2	
Induction of labour .	1	1				1									1	
(Invited uterine)	1	1				1				1						
Vomiting in pregnancy	1	1				1										
Accidental hemorrhage in pregnancy	1	1				1				1						
Elophthalmasia in pregnancy	1	1				1			1							Legs and abdomen affected.

TABLE IV.—*Table of Mortality.*

DISEASE.	Total.		Age.									Mor- tality per cent.
	No. dis- charged.	No. died.	Under 5	5-10	10-20	20-30	30-40	40-50	50-60	60-70	Over 70	
1. GENERAL DISEASES.												
Scarlet fever	26	4	...	3	1	...	...	...	...	...	...	13.3
Enteric fever	96	18	...	1	6	6	4	1	...	...	...	15.7
Erysipelas	32	3	...	...	...	1	...	1	1	...	...	8.5
Pyæmia . . . . .	...	1	...	...	1	...	...	...	...	...	...	...
Diphtheria	11	13	9	4	...	...	...	...	...	...	...	54.1
Pertussis	5	1	1	...	...	...	...	...	...	...	...	...
Acute rheumatism	126	2	...	...	...	1	1	...	...	...	...	1.5
Diabetes mellitus	4	4	...	...	...	1	2	...	1	...	...	...
Purpura	1	1	...	...	...	...	...	...	1	...	...	...
Leucocythæmia . . . . .	...	1	...	...	...	1	...	...	...	...	...	...
General tuberculosis . . . . .	...	5	1	...	2	1	...	...	...	1	...	...
Marasmus . . . . .	...	2	2	...	...	...	...	...	...	...	...	...
2. DISEASES OF THE RESPIRATORY ORGANS.												
Laryngitis	4	1	...	...	...	...	...	1	...	...	...	...
Carcinoma of larynx	3	2	...	...	...	...	...	...	1	...	1	...
Acute bronchitis	8	3	2	...	...	...	...	...	1	...	...	27.2
Subacute and chronic bronchitis.	52	13	2	...	...	1	...	2	6	2	...	20
Broncho-pneumonia	10	4	4	...	...	...	...	...	...	...	...	28.5
Acute pneumonia	58	9	4	...	...	2	...	2	1	...	...	13.4
Phthisis	42	28	...	...	1	8	10	7	1	...	1	40
Hæmoptysis ¹	10	4	...	...	1	...	1	...	1	...	...	28.5
Pneumothorax . . . . .	...	1	...	...	...	1	...	...	...	...	...	...
Pyo-pneumothorax . . . . .	...	1	...	...	1	...	...	...	...	...	...	...
Pleurisy	25	3	...	...	...	...	2	...	1	...	...	10.7
Empyema	5	2	...	...	1	...	1	...	...	...	...	...
Intra-thoracic tumour	2	1	...	...	...	...	...	...	...	1	...	...
Pulmonary collapse . . . . .	...	1	1	...	...	...	...	...	...	...	...	...
3. DISEASES OF THE ORGANS OF CIRCULATION.												
Pericarditis	4	1	...	...	...	...	...	1	...	...	...	...
Adherent pericardium . . . . .	...	1	...	...	...	1	...	...	...	...	...	...
Hypertrophy of heart . . . . .	...	1	...	...	...	...	...	1	...	...	...	...
Malformation of heart	4	3	1	...	2	...	...	...	...	...	...	...
Mitral	39	14	...	...	1	1	5	3	4	...	...	26.4
Aortic	4	5	...	...	1	1	1	1	...	...	...	...
Mitral and aortic	17	15	...	...	1	2	5	4	1	2	...	46.8
Thoracic aneurysm	7	5	...	...	...	...	1	4	...	...	...	41.6
Abdominal aneurysm . . . . .	...	1	...	...	...	...	1	...	...	...	...	...
4. DISEASES OF THE DUCTLESS GLANDS.												
Addison's disease . . . . .	...	1	...	...	...	...	...	...	...	1	...	...
5. DISEASES OF THE DIGESTIVE ORGANS.												
Stricture of œsophagus	6	4	...	...	...	...	...	...	4	...	...	40
Carcinoma of stomach	2	8	...	...	...	...	4	2	2	...	...	80
Pyloric obstruction . . . . .	...	1	...	...	...	...	...	1	...	...	...	...

¹ Age not stated in one case.

TABLE IV—continued.

DISEASE.	Total.		Age.									Mor- tality per cent.
	No. dis- charged.	No. died.	Under 5	5-10	20	30	40	50	60	70	Over 70	
5. DISEASES OF THE DIGESTIVE ORGANS—continued.												
Enteritis	2	2	1	1	...	...	...	...	...	...	...	...
Intestinal obstruction	4	7	1	1	1	2	1	...	1	...	...	63.6
Acute peritonitis . . . . .	...	1	...	1	...	...	...	...	...	...	...	...
Chronic peritonitis	7	1	...	...	...	1	...	...	...	...	...	...
Cirrhosis of liver	12	7	...	...	...	3	4	...	...	...	...	36.8
Hydatid of liver . . . . .	...	1	...	...	...	1	...	...	...	...	...	...
Cancer of liver	5	5	...	...	...	...	2	1	2	...	...	50
Abdominal tumour	4	5	...	...	...	1	...	...	4	...	...	...
Abdominal hydatid	1	1	...	...	...	...	1	...	...	...	...	...
6. DISEASES OF THE GENITO-URINARY SYSTEM.												
Acute nephritis	24	2	...	2	...	...	...	...	...	...	...	7.6
Chronic nephritis	26	9	...	...	...	1	1	5	1	1	...	25.7
Tubercular kidney . . . . .	...	1	...	...	1	...	...	...	...	...	...	...
Cystitis	4	1	...	...	...	1	...	...	...	...	...	...
7. DISEASES OF THE NERVOUS SYSTEM.												
Tubercular meningitis . . . .	...	1	...	1	...	...	...	...	...	...	...	...
Meningeal hæmorrhage . . . .	...	1	...	...	...	...	...	...	1	...	...	...
Hemiplegia	19	1	...	...	...	1	...	...	...	...	...	...
Cerebral hæmorrhage . . . . .	...	8	...	...	...	1	2	1	4	...	...	...
Cerebral softening . . . . .	...	3	...	...	1	1	...	...	1	...	...	...
Cerebral tumour	5	3	...	1	...	1	...	1	...	...	...	...
Chronic cerebritis . . . . .	...	1	...	...	...	1	...	...	...	...	...	...
Convulsions . . . . .	...	3	2	...	...	1	...	...	...	...	...	...
General paralysis of insane . .	7	1	...	...	...	...	1	...	...	...	...	...
Mania	2	1	...	...	...	...	...	1	...	...	...	...
Abscess of cerebellum . . . . .	...	2	...	...	2	...	...	...	...	...	...	...
Cervical pachymeningitis . . .	...	1	...	...	...	...	...	...	1	...	...	...
Paraplegia	13	4	...	1	...	1	...	...	2	...	...	23.5
8. POISONING.												
Delirium tremens	3	1	...	...	...	...	1	...	...	...	...	...
Opium	2	2	...	...	...	1	...	1	...	...	...	...
Carbolic acid . . . . .	...	1	...	...	1	...	...	...	...	...	...	...
Sulphuric acid . . . . .	...	1	1	...	...	...	...	...	...	...	...	...
9. SURGICAL AND MISCELLANEOUS.												
Emaciation . . . . .	...	1	1	...	...	...	...	...	...	...	...	...
Osteomyelitis . . . . .	...	1	...	1	...	...	...	...	...	...	...	...
Acute periostitis . . . . .	...	1	...	...	1	...	...	...	...	...	...	...
Malignant tumour of neck . . .	...	1	...	...	...	...	...	...	1	...	...	...
10. DISEASES OF THE FEMALE GENERATIVE ORGANS.												
Parametritis	16	2	...	...	2	...	...	...	...	...	...	11.1
Uterine fibroid	12	3	...	...	1	1	...	1	...	...	...	20
Malignant disease of uterus . .	20	2	...	...	...	...	2	...	...	...	...	9
Carcinoma of ovaries . . . . .	...	1	...	...	...	...	1	...	...	...	...	...

TABLE V.—*Cases of Infectious Diseases originating in Hospital.*

Initials.	Sex.	Age.	Disease for which admitted.	Disease originating in hospital.	Date of attack.	Result.	Remarks.
G. S.	M.	21	—	Rötheln .	April 25	C. April 29	A student.
J. S.	M.	5	Pott's disease .	Measles .	June 12	C. July 2	From Edward Ward.
S. G.	M.	4	Traumatic cataract .	Ditto .	Nov. 8	C. Nov. 28	From Ophthalmic Ward.
L. H.	F.	4	Hip disease .	Ditto .	Nov. 10	C. Jan. 26	From Victoria Ward.
K. V.	F.	28	—	Ditto .	Dec. 12	C. Dec. 23	A nurse.
R. A.	M.	1½	Laceration of foot .	Varicella.	Oct. 23	C. Nov. 4	From Victoria Ward.
G. R.	M.	1½	Periostitis .	Ditto .	Nov. 7	C. Dec. 4	Ditto.
C. S.	F.	1	Bronchitis .	Ditto .	Sept. 28	C. Oct. 28	Ditto.
W. J. T.	M.	7	Enlarged glands .	Scarlet fever .	Sept. 6	C. Jan. 28	From William Ward.
C. S.	M.	5	Abdominal tumour .	Ditto .	March 14	C. April 19	From Victoria Ward.
E. H.	M.	32	Fractured patella .	Ditto .	Feb. 9	C. March 21	From Leopold Ward.
W. V.	M.	30	Ununited fracture of leg .	Ditto .	May 15	C. July 12	Ditto.
G. A. D.	M.	6	—	Ditto .	June 21	C. July 4	A porter's son.
E. P.	M.	4	Rickets .	Ditto .	Aug. 2	C. Sept. 28	From Victoria Ward.
J. S.	M.	4	Fractured tibia and fibula .	Ditto .	Aug. 6	C. Sept. 24	Ditto.
H. C.	M.	4	Fractured femur .	Ditto .	Aug. 8	C. Oct. 29	Ditto.
C. A.	F.	6	Ditto .	Ditto .	March 8	C. April 26	From Alexandra Ward.
G. E. E.	F.	11	—	Ditto .	May 21	C. June 28	A porter's daughter.
E. M. C.	F.	25	—	Ditto .	May 31	C. July 11	A probationer.
H. O.	F.	16	—	Ditto .	July 8	C. August 12	A servant of the hospital.
M. A. H.	F.	7	Hairy mole .	Ditto .	Aug. 2	C. Sept. 10	From Victoria Ward.
A. G.	M.	4	Necrosis of femur .	Enteric fever .	Nov. 27	C. Jan. 15	From Albert Ward.
M. C.	F.	25	—	Ditto .	Feb. 6	C. March 13	A nurse.
I. H.	F.	39	—	Ditto .	March 27	C. June 30	Ditto.
E. D.	F.	37	—	Ditto .	July 4	C. August 29	Ditto.
L. T.	F.	28	—	Ditto .	Oct. 15	C. Dec. 8	Ditto.
W. B.	M.	4	Necrosis of fibula .	Pertussis .	April 30	C. June 21	From Edward Ward.
W. B. W.	M.	4	Abscess of thigh .	Ditto .	April 29	C. June 30	From Victoria Ward.
A. G. L.	M.	3	Hip disease .	Ditto .	April 30	C. Nov. 15	Ditto.

TABLE VI.—Showing the relative frequency of the various complications of Acute Rheumatism in the first, second, and third, or later attack.

ACUTE RHEUMATISM.	Total.	Discharged.		Died.		Under 5	5-10	10-20	20-30	30-40	40-50	50-60	Over 60	Per cent.
		M.	F.	M.	F.									
Total of cases . . .	128	61	65	1	1	1	2	48	50	21	3	2	1	...
1st attack . . .	67	28	38	...	1	1	2	27	22	13	1	1	...	52·34
2nd „ . . .	29	16	13	...	...	...	...	13	12	2	1	1	...	22·65
3rd „ . . .	32	17	14	1	...	...	...	8	16	6	1	...	1	25
<i>Heart and Pericardium:</i>														
Normal . . .	36	...	...	...	...	...	...	...	...	...	...	...	...	28·12
1st attack . . .	25	15	10	...	...	1	1	10	6	7	...	...	...	37·31
2nd „ . . .	7	2	5	...	...	...	...	1	4	1	...	1	...	24·13
3rd „ . . .	4	3	1	...	...	...	...	...	1	2	...	...	1	12·5
Transient murmur . . .	5	...	...	...	...	...	...	...	...	...	...	...	...	3·9
1st attack . . .	4	2	2	...	...	...	...	3	1	...	...	...	...	5·97
2nd „ . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3rd „ . . .	1	...	1	...	...	...	...	1	...	...	...	...	...	3·12
Pericarditis . . .	38	...	...	...	...	...	...	...	...	...	...	...	...	29·68
1st attack . . .	20	7	12	...	1	...	...	8	6	4	1	1	...	29·85
2nd „ . . .	9	5	4	...	...	...	...	5	3	...	1	...	...	31·03
3rd „ . . .	9	3	5	1	...	...	...	1	5	3	...	...	...	28·12
Mitral obstruction . . .	13	...	...	...	...	...	...	...	...	...	...	...	...	10·15
1st attack . . .	4	1	3	...	...	...	...	2	2	...	...	...	...	5·97
2nd „ . . .	3	...	3	...	...	...	...	2	1	...	...	...	...	10·34
3rd „ . . .	6	2	4	...	...	...	...	...	4	1	1	...	...	18·75
Mitral regurgitation . . .	77	...	...	...	...	...	...	...	...	...	...	...	...	60·15
1st attack . . .	33	8	24	...	1	...	1	13	13	4	1	1	...	49·25
2nd „ . . .	18	11	7	...	...	...	...	11	6	1	...	...	...	62·06
3rd „ . . .	26	13	13	...	...	...	...	8	14	3	1	...	...	81·25
Aortic obstruction . . .	2	...	...	...	...	...	...	...	...	...	...	...	...	1·56
1st attack . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2nd „ . . .	1	1	...	...	...	...	...	1	...	...	...	...	...	3·44
3rd „ . . .	1	...	1	...	...	...	...	...	1	...	...	...	...	3·12
Aortic regurgitation . . .	6	...	...	...	...	...	...	...	...	...	...	...	...	4·68
1st attack . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2nd „ . . .	1	1	...	...	...	...	...	1	...	...	...	...	...	3·44
3rd „ . . .	5	3	2	...	...	...	...	2	3	...	...	...	...	15·62
Albuminuria . . .	5	...	...	...	...	...	...	...	...	...	...	...	...	3·9
1st attack . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2nd „ . . .	2	1	1	...	...	...	...	...	1	1	...	...	...	6·89
3rd „ . . .	3	2	...	1	...	...	...	...	2	1	...	...	...	9·37

TABLE VI—continued.

ACUTE RHEUMATISM.	Total.	Dis- charged.		Died.		Under 5	5-10	10-20	20-30	30-40	40-50	50-60	Over 60	Per cent.
		M.	F.	M.	F.									
Delirium	1	...	...	...	...	...	...	...	...	...	...	...	...	78
1st attack . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2nd „ . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3rd „	1	...	...	1	...	...	...	...	...	1	...	...	...	312
Bronchitis	2	...	...	...	...	...	...	...	...	...	...	...	...	156
1st attack . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2nd „	1	...	1	...	...	...	...	...	...	...	1	...	...	344
3rd „	1	...	1	...	...	...	...	1	...	...	...	...	...	312
Erythema nodosum	1	...	...	...	...	...	...	...	...	...	...	...	...	78
1st attack	1	...	1	...	...	...	...	...	1	...	...	...	...	149
2nd „ . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3rd „ . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chorea	1	...	...	...	...	...	...	...	...	...	...	...	...	78
1st attack	1	...	1	...	...	...	...	1	...	...	...	...	...	149
2nd „ . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3rd „ . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pleurisy	8	...	...	...	...	...	...	...	...	...	...	...	...	625
1st attack	6	2	4	...	...	...	1	...	3	2	...	...	...	895
2nd „	1	1	...	...	...	...	...	...	1	...	...	...	...	344
3rd „	1	...	1	...	...	...	...	...	1	...	...	...	...	312

TABLE VII.—Showing the causation of cases of Chorea, the number of cases which were unilateral during the whole attack, and the presence or absence of a cardiac murmur.

CHOREA	Total.	Dis- charged.		Died.		Under 5	5-10	10-20	20-30	30-40	40-50	50-60	Over 60	Per cent.
		M.	F.	M.	F.									
Total of cases	25	6	19	...	...	1	9	14	1	...	...	...	...	...
1st attack	19	6	13	...	...	1	7	11	...	...	...	...	...	76
2nd „	6	...	6	...	...	...	2	3	1	...	...	...	...	24
I. (a) Family history of rheumatism	6	2	4	...	...	1	1	4	...	...	...	...	...	24
(b) Family history of neuroses	11	2	9	...	...	1	2	8	...	...	...	...	...	44
II. (a) Personal history of rheumatism	5	2	3	...	...	...	...	3	...	...	...	...	...	20
(b) Personal history of fright	4	2	2	...	...	...	2	2	...	...	...	...	...	16
III. Unilateral throughout the attack	4	3	1	...	...	...	...	4	...	...	...	...	...	16
IV. Transient cardiac mur- mur	6	2	4	...	...	...	1	4	1	...	...	...	...	24
V. Permanent cardiac mur- mur	7	...	7	...	...	...	4	3	...	...	...	...	...	28
VI. Pericarditis	3	1	2	...	...	...	1	2	...	...	...	...	...	12

TABLE VIII.—*Diabetes.*

Initials, Age, and Sex.	History.	General Symptoms.	Urine.			Temperature.	Complications.	Remarks and Post-mortem Examination.
			Quantity.	Sp. gr.	Sugar.			
H. S., 15, M.	Giddiness, thirst, and increased quantity of urine for two weeks; emaciation for one week	Skin, lips, teeth, and tongue dry; thirst; no excessive hunger; slight drowsiness occasionally	41 to 130 ounces	1035 to 1040	581 to 2394 gr. per diem	Variable from 96°6' to 101°6'	None	Mixed diet and Codeia gr. ij, t. d. s. Patient gained two pounds in weight, and the urine diminished in quantity. Discharged relieved.
C. S., 39, M.	Irritation at meatus; increased quantity of urine, thirst, hunger, emaciation and weakness for a year	Skin dry; gums spongy; teeth loose; breath odorous, like rotten apples; appetite moderate; much thirst; tongue coated	160 to 410 ounces	1029 to 1033	911 to $\frac{57}{100}$ to $\frac{24\frac{3}{4}}{100}$ ounces	97° to 100°4'	Diarrhoea	Mixed diet and codeia. Patient gained nearly five pounds. Discharged relieved.
R. S., 22, M.	—	Admitted semi-comatose; tongue and skin dry	—	1040	Much	97° to 103°	Albuminuria	Died on the day of admission. Temp. rose to 105°2° after death. P.M.—Congestion of liver, lungs, and kidneys.
A. C. T., 35, M.	Increased flow of urine, thirst and emaciation for two years	Skin dry and cracked; tongue clean; appetite fair; bowels confined; thirst; insomnia and depression. Later on signs of a cavity in right lung	120 to 360 ounces	1032 to 1040	1010 to 8640 gr.	Slightly raised before death	Phthisis	Special diet and ergot. P.M.—Consolidation of both lungs; cavity in right lower lobe; kidneys large. No other abnormal condition.

R. E. M., 50, M.	Increased quantity of urine, thirst, and debility for three months. An epileptiform attack a month ago	Skin dry and rough; thirst; constipation and headache	13 to 116 ounces	1016 to 1037	148 to 2088 gr.	96° to 99·4° before death 102°	Cerebral softening	P.M.—A patch of yellow softening in right internal capsule; red streaks in medulla and pons; collapse of lower lobe of right lung.
S. R. G., 33, M.	—	—	—	—	—	—	Phthisis	P.M.—Tubercular consolidation and cavities in lungs.
J. N., 44, F.	Increased quantity of urine for eight years; afterwards thirst and hunger	Well-nourished woman; bowels relaxed	66 to 140 ounces	1038 to 1045	2050 to 4160 gr.	Subnormal	None	Discharged unrelieved.
E. C., 54, F.	Weakness, dyspnoea, and increased quantity of urine for six weeks	Tongue furred; gums swollen; teeth loose; bowels regular; slight thirst	25 to 87 ounces	1020 to 1040	Quantity not stated	97° to 98·6°	None	Codicia gr. ij, b. d. Discharged relieved.

TABLE IX.—*Empyema*.

Initials, age, and sex.	Admitted.	Discharged.	Result.	History.	State on admission.	Treatment and progress.	Remarks and post-mortem examination.
W. K., 45, M.	July 24.	Aug. 17.	C.	Severe pain in left side on July 1st. Was admitted into Edward Ward on the 16th. There was then found to be a diffuse swelling in the left dorsal region near the spine. The patient was expectorating purulent sputum. The swelling diminished in size, and the expectoration became less profuse. Was transferred to Medical Ward.	Emaciated and weak. There is a discoloured patch of skin, rather larger than a crown piece, close to the vertebral border of left scapula. At this point there is slight egophony. Over lower third of left lung there is dulness, with crepitation and diminished vocal fremitus and resonance.	Aug. 8th.—Diarrhea, with blood in the stools, for two days; retention of urine; some albuminuria. The diarrhea and retention lasted three days. On Aug. 12th it is noted that there was no dulness at left base, although the crepitation and diminished voice sounds persisted. The temperature twice rose to between 101° and 102°, but otherwise was normal. Pot. iod. gr. v. t. d. s.	The empyema in this case evidently opened into one of the bronchi on the left side, and hence found a ready exit. The almost total absence of pyrexia was doubtless due to the free drainage through the respiratory tubes.
E. C. S., 3, M.	Aug. 22.	Dec. 17.	C.	Family history good. The child was said to have been ill with measles for seven weeks before admission.	Dulness, absence of breath sounds and of vocal resonance and fremitus over nearly all the right side of chest; signs of fluid at the extreme left base; heart displaced to the left.	Aug. 23rd.—12½ oz. of pus removed by extractor. On Sept. 20th 5½ oz. of pus were drawn off by aspirator. On Oct. 4th it is noted that there is resonance over right lung in front, breath sounds distinct and accompanied by coarse crepitation; behind there are signs of fluid in lower half of right side. Temp. slightly raised for the first two days, normal afterwards.	
G. T., 19, M.	May 11.	Aug. 4.	C.	Cough for several months. Shivering 10 days ago, with pain in left side and night sweats.	Left side of chest enlarged; dulness back and front, with diminished breath and voice sounds.	May 16th.—65 ounces of pus removed from left side. The side became resonant, and breath sounds were audible immediately after the operation. 18th.—Some dulness over left side with friction. 19th.—Temp. 102·4°, pericarditis. 31st.—Left pleura opened and 6 oz. of pus removed antisepti-	

A. T., June 2 5, F.	Ang. 7	R.	No history.	<p>Bulging of left intercostal spaces anteriorly, with dullness all over left side and absence of breath sounds and vocal fremitus; vocal resonance diminished; egophony near angle of scapula. Heart is displaced to the right, and a loud systolic murmur is heard all over precordial region.</p>	<p>June 10th.—$1\frac{1}{2}$ oz. of pus removed by aspirator. July 21st.—Dullness all over left side, except at apex; breath sounds not heard below angle of scapula; vocal fremitus and resonance about equal on both sides. Aug. 3rd.—Bruit de pot fêlé, tubular breathing, and crepitation at left apex. There was an evening rise in temp. throughout, except during the last three weeks, when there was no pyrexia.</p>	<p>The signs of phthisis which became evident during the patient's stay in the hospital point to the tubercular nature of the empyema in this case.</p>
E. D., Mar. 31 12, F.	May 26	R.	Pain in left side. Cough and expectoration for 3 weeks.	<p>Dullness with diminished voice and breath sounds over lower half of left side; egophony and pectoriloquy at junction of upper and lower halves posteriorly.</p>	<p>April 10th.—Harsh systolic murmur to right of sternum. 18th.—10 oz. of pus removed by aspirator. May 26th.—Patient much better, but expectoration contains much pus. Slight pyrexia occasionally.</p>	
H. G., Feb. 28 17, M.	April 1	D.	"Severe cold" for 3 mos. Hemoptysis 2 mos. ago.	<p>Left side of chest contracted; dullness back and front; cavernous breathing in front; crepitation, bronchophony and pectoriloquy behind. Heart is displaced into left axilla. Urine contains albumen and pus.</p>	<p>The urine continued to contain large quantities of pus, the lower limbs became much swollen and the cough more troublesome. Temp. remained normal throughout.</p>	<p>No post-mortem examination. The disease in this case was apparently of a tubercular nature.</p>
G. T., Jan. 12 32, M.	July 28	D.	Shivering, vomiting, and pain in right side 3 weeks ago, followed by cough and expectoration.	<p>Signs of fluid over lower two thirds of right lung. Pain in right side and dyspnoea. 30 oz. of blood-stained, slightly turbid fluid drawn off.</p>	<p>January 19th.—Signs of fluid in lower third of right pleura; friction in left axilla. Mar. 22.—Rigors and fever, suppurative of vitreous humour. May 5th.—Piece of necrosed rib removed from right side and abscess opened over right shoulder. Ten days before death right facial paralysis came on, followed by unconsciousness and left hemiplegia.</p>	<p>P. M.—Both pleuræ adherent, caries of right 10th rib, partial collapse of lungs, disease of right petrous bone, and intense suppurative basal meningitis.</p>

TABLE X.—*Fatal cases of Intestinal Obstruction in which a Post-mortem Examination was made.*

Initials, age, and sex.	Admitted.	Died.	Symptoms.	Treatment.	Post-mortem examination.
E. K., 43, M.	Mar. 29	April 13	Abdominal pain and vomiting six months before admission, followed by emaciation. Abdomen distended; coils of intestine visible through walls; enlarged inguinal glands, and a nodule below umbilicus; vomiting immediately after food. Signs of peritonitis came on soon after admission	Enemata and injections of morphia	Malignant growth in intestinal walls four feet below pylorus. The gut at the point of stricture readily admits the thumb. Small intestine above much distended, and the walls very soft and laceable. There is also a malignant stricture at junction of ileum with cæcum. Peritoneum is studded with small masses of new growth, umbilicated in parts; intestines adherent all over; subcapsular nodules of new growth in liver and spleen.
H. B., 19, M.	July 8	July 29	Paroxysmal abdominal pain, constipation, and vomiting for three months. Swelling of abdomen for two months. Round the umbilicus is a large hard mass to which the skin is adherent. There are also masses in both iliac regions. Bowels throughout very sluggish, but there is not absolute obstruction; persistent vomiting	Enemata and morphia	Rupture of cæcum; great omentum much thickened and contracted; annular malignant stricture of sigmoid flexure. The gut is narrowed, admitting only the tip of the little finger; some enlarged glands.
C. L., 26, M.	Aug. 20	Aug. 27	Had some gastro-intestinal symptoms nine years ago. Two weeks ago had abdominal pain, but no vomiting or constipation. Pain became severe, and vomiting with constipation supervened two days before admission. Swelling and tenderness of abdomen, constant vomiting, hiccough, and borborygmi present on admission. A cast of the bowel came away after an enema	Enemata of warm oil and opium	A knuckle of small intestine, eight inches from the ileo-cæcal valve, is adherent by a fibrous thickening to the tissues near the right sciatic notch. The lumen of the gut is not narrowed at this point.

W. R., 38, M.	Aug. 31	Sept. 12	Abdominal pain and constipation for five weeks. Abdomen distended and tympanitic; much pain; some vomiting and constipation	Intestines punctured through abdominal walls, some fluid fecal matter escaping. Later on the abdomen was opened, and an artificial anus made near cæcum	Artificial anus opens into ileum close to the ileo-cæcal valve. There was new growth involving the ileo-cæcal valve and the walls of the cæcum for a distance of three inches. The lumen of the gut was much narrowed. There was also acute peritonitis in the lower half of abdomen.
F. E., 7 months, F.	June 11	June 11	Patient began to vomit after a fall five days ago. Since then vomiting has been constant, and, with the exception of blood and mucus, nothing has been passed by stool. An undefined swelling was found in the region of the sigmoid flexure	Inflation of rectum by air. The tube suddenly passed higher up the rectum, and at once the abdomen became uniformly distended	Prolapse of small intestine through the ileo-cæcal opening. The gut extended down to sigmoid flexure, which showed a linear rupture. The invaginated portion protruded through the rent in the walls of the sigmoid flexure.
S. R., 65, F.	July 25	July 28	Vomiting, constipation, and abdominal pain for two weeks. Abdomen distended and tympanitic; coils of small intestine visible; no solid tumour detected; obstinate constipation	Enemata	At junction of descending colon and sigmoid flexure was a stricture apparently due to cicatrization of a simple ulcer. In transverse colon was an ulcer the size of the palm of the hand, on the floor of which was a small pin-hole perforation. The abdominal cavity contained gas, and there was acute peritonitis.

SPECIAL ANALYSES AND ABSTRACTS.

I.—ACUTE PNEUMONIA.

Fatal Cases.

The following are the most important :

Male, æt. 1 $\frac{2}{3}$. Had axillary abscess two weeks ago. Dulness over lower half of left side and lower fifth of right ; loud rhonchus and crepitation on right side ; tubular breathing on left. A few days after admission there was dulness over whole of left lung posteriorly with feeble breath sounds, and comparative dulness over the whole of right lung behind. Highest temperature (on admission) 105° p.m.

Post-mortem.—Double pleuro-pneumonia affecting both lower lobes ; extensive collapse of right upper lobe.

Male, æt. 52. Cough and dyspnœa for six weeks ; delirium for three or four days. Chest barrel-shaped ; dulness, tubular breathing and increased vocal fremitus and resonance over apex in front and upper two thirds of left lung behind ; some crepitation and dulness over upper two thirds of right lung. Highest temperature 104° p.m.

Post-mortem.—Right pleuro-pneumonia affecting the whole organ ; left lung much congested at base ; large white kidneys with slight interstitial growth.

Male, æt. 40. Admitted moribund. Dulness all over right lung, with increased vocal fremitus and tubular breathing ; crepitation all over both lungs.

Post-mortem.—Right pleuro-pneumonia affecting the upper lobe ; lower lobe very congested, and consolidated in parts ; left lung very œdematous and hyperæmic ; a little lymph at base of brain.

Male, æt. 28. Admitted moribund. Dulness at right base, with distant tubular breathing, diminished vocal fremitus, and fine crepitation. Highest temperature (day of admission) 103° a.m.

Post-mortem.—Right pleuro-pneumonia affecting lower lobe ; left pleurisy and pericarditis.

Female, æt. 42. Dulness, tubular breathing, and bronchophony over the middle third of right lung behind ; crepitation over both lungs elsewhere ; friction in right infra-axillary region. Highest temperature 104.4°.

Post-mortem.—Right pleuro-pneumonia affecting the middle lobe ; two small caseous masses with broncho-pneumonic granulations at left apex ; kidneys granular.

II.—MALFORMATION OF HEART.

Male, æt. 23. Marked cyanosis, especially of face and hands; ends of fingers much clubbed; surface of body covered with coppery blotches. Heart hypertrophied; loud systolic bruit all over precordial area, most intense over left border of sternum, just below the level of nipple. Septum nasi deviates to the right; palate much arched.

Male, æt. 13. No cyanosis; chest rickety; lateral curvature in dorsal region. Heart much hypertrophied; pulmonary thrill to left of sternum, and thrill also at apex; systolic murmur loudest in third left interspace, and diastolic murmur heard down sternum and behind at upper angle of left scapula.

Female, æt. 1. Face dusky; nose and lips very livid; lower lip thick; forehead broad; fissure between halves of frontal bone not closed; anterior fontanelle widely open; tips of fingers livid; nails of thumbs curved and broad; toes livid and bulbous. Heart hypertrophied; systolic murmur heard at left base on admission, but absent a few days later.

Female, æt. 27. Much cyanosis; conjunctivæ dusky blue; finger ends livid and slightly bulbous; pulsation of jugulars; lateral and antero-posterior spinal curvature; chest much contracted laterally. Heart hypertrophied; pulsation and thrill all over cardiac area; heart sounds loud and occasionally irregular; loud double murmur heard down all left border of sternum; systolic most intense in second left interspace; some bronchitis and albuminuria. Temperature usually subnormal, especially at night.

Male, æt. 15. Lower part of chest very prominent, contracted from side to side; marked angular curvature in upper dorsal region; surface of body blue; jugular veins distended; ascites, and œdema of face, scrotum, and legs; crepitation all over both lungs. Heart apparently not hypertrophied, systolic murmur at apex. Temperature occasionally subnormal. Died on the ninth day; no autopsy.

Female, æt. 5 months. Condition of heart quite unsuspected during life.

Post-mortem.—Heart much hypertrophied; opening between ventricles at upper part of septum; walls of both ventricles very thick; pulmonary artery large; aorta inversely small; both vessels arise in the normal way; collapse of both lower lobes of lungs.

Female, æt. 15. Face and lips blue; fingers and toes bulbous and livid. Heart enlarged; blowing, systolic murmur at apex, and for some distance around, and a doubtful presystolic murmur internal to apex; bronchitic sounds over both lungs, and signs of pneumonia over left lower lobe; œdema of lungs; occasional vomiting and diarrhœa. Temperature normal throughout. Died on the twenty-fifth day, after expectorating a few ounces of dark bloody fluid.

Post-mortem.—Moderate amount of fluid in abdomen, pericardium, and left pleura; right pleura adherent; left lung collapsed, almost cartilaginous; right lung œdematous and congested, with some semi-solid patches at base. Heart rather square-shaped; adhesion of one flap of mitral to inter-ventricular septum.

III.—CHRONIC NEPHRITIS.

Fatal Cases.

Seven were examined post-mortem, of which 6 were cases of granular kidney and 1 of large white kidney.

Male, æt. 48, a plumber. Father died of gout. Patient has had gout, lead colic, and wrist-drop. On admission there was moderate general dropsy. The heart was hypertrophied. The urine was pale, sp. gr. was 1011; there was about one-fifth albumen, but no casts were detected. There was double wrist-drop, the extensors of the forearms and the interossei being much wasted.

The day after admission he had a uræmic convulsion, during and after which the pupils were unequal, the right being the larger.

He died comatose on the 3rd day after admission.

Post-mortem.—General cardiac hypertrophy; contracted granular kidneys; atrophy of extensors on back of forearms, with evident change in posterior interosseous nerves.

Male, æt. 41. Epileptic fits for 14 years, debility and dyspnœa for 6 months; vomiting, giddiness, and increased quantity of urine for about 3 months. On admission there was no œdema. The heart was enlarged; there was a soft systolic murmur, heard loudest at left base. The urine was slightly increased in quantity, sp. gr. 1013, contained about one-fifth albumen and granular casts. There was also double neuro-retinitis and small retinal hæmorrhages. The temperature, except just before death, was either normal or subnormal.

He died on the fifteenth day, after an epileptiform seizure, during which the right pupil was observed to be larger than the left.

Post-mortem.—Great hypertrophy of left ventricle; kidneys small and granular.

Male, æt. 38, a painter. Lead colic five years ago; gout four years ago; morning sickness of late. Has drunk much.

On admission there was no œdema, but there was marked dyspnœa. The heart was enlarged, and there was a systolic murmur, loudest at apex, and a diastolic murmur at right base. The urine was diminished in quantity, sp. gr. 1012, and contained one-third albumen.

The patient died on the sixty-fourth day after admission.

Post-mortem.—General hypertrophy of heart; ulcerative endocarditis affecting aortic valves and lining membrane of ventricle; thickening of mitral valve; left pleurisy; œdema and collapse of lungs; granular but not contracted kidneys.

Male, æt. 42. History of syphilis and alcoholism.

On admission he complained of headache and pains in various bones, worse at night. The heart seemed normal, the liver was enlarged, and the urine was of low sp. gr., and contained a trace of albumen.

Before death, which occurred on the fifty-second day, hæmorrhages and œdema of the retina were found; some œdema was noticed, and he gradually became weak and drowsy.

Post-mortem.—Some hypertrophy of heart with subendocardial hæmorrhages;

emphysema of lungs; probable gumma in spleen; much dark blood in large intestine; capillary hæmorrhages in brain; kidneys small and granular.

Male, æt. 50, a butcher. Dyspnœa and cough for six weeks. Hæmatemesis and melæna three weeks ago.

On admission he was suffering from dyspnœa and general dropsy; no hypertrophy of heart made out; pulse hard; urine 1020, a trace of albumen. Temp. 96·6°.

He died on the second day after admission.

Post-mortem.—General dropsy; cardiac hypertrophy; mitral constriction; infarct in lower lobe of left lung; nutmeg liver; kidneys granular and contracted, one containing an infarct; vessels atheromatous.

Female, æt. 46. Vomiting and diarrhœa for six weeks.

On admission she was suffering from delusions, œdema of legs, and dyspnœa. The urine, which was of about normal sp. gr., contained half albumen. The temperature throughout was subnormal.

Post-mortem.—General cardiac hypertrophy; skull cap very thick; brain small; cortex thin; sulci shallow; kidneys contracted and granular.

Female, æt. 26. There was general dropsy. Urine 1015, contained much albumen and many granular casts. Patient died soon after admission.

Post-mortem.—Tubular nephritis with slight interstitial growth; hypertrophy of left ventricle; general dropsy.

IV.—CEREBRAL HÆMORRHAGE.

Fatal Cases.

Male, æt. 60. Was admitted unconscious with right hemiplegia. Pupils small, acting to light, the right more dilated than the left. Heart irregular; no murmur; pulse full and fairly soft; temp. 105°. Before death had two attacks in which the body became rigid and the breathing rapid.

Post-mortem.—Extensive hæmorrhage in the ventricles; left corpus striatum and optic thalamus ploughed up; atheroma of arteries; granular kidneys; cardiac hypertrophy.

Male, æt. 69. Admitted comatose; no evident paralysis; limbs rigid; left pupil more dilated than right; both pupils inactive; temp. 96·8°; arteries rigid.

Post-mortem.—Numerous minute cysts in left centrum ovale with some yellow staining; large recent clot in left lateral ventricle, destroying the white matter nearly up to the cortex, and the greater part of the corpus striatum and optic thalamus; small amount of clot also in right ventricle; fore part of pons ploughed up by a recent hæmorrhage, and two small hæmorrhages further back in middle line; arteries degenerated; heart hypertrophied; kidneys granular.

Male, æt. 64. Three years ago had an epileptiform attack, not followed by paralysis; two months ago had a fainting fit.

Patient was admitted comatose; breathing stertorous; urine albuminous; heart hypertrophied; pulse tense and intermittent; pupils small, but equal. Temperature at death 106°, half an hour afterwards 107·9°.

Post-mortem.—Hypertrophy of left ventricle of heart; atheroma of arteries; slight interstitial disease of kidneys; much clot in left lateral ventricle, small quantity in right; fourth ventricle distended with clot; tip of caudate nucleus on right side yellowish and very soft; microscopically there were numerous corpuscles of Gluge.

Male, *æt.* 46. Had an epileptiform fit two years ago, followed by right hemiplegia, and one year ago again lost power on the right side. Patient was admitted unconscious, with small but active pupils; complete left hemiplegia and brisk reflexes. Temp. just before death 106.6° , afterwards 107.8° .

Post-mortem.—Hypertrophy of left ventricle of heart; granular kidneys; much clot in right lateral ventricle; laceration of outer part of central nuclei; a cyst with yellow fluid contents just external to left lenticular nucleus; no change found in cord microscopically.

Female, *æt.* 63. Was admitted partially unconscious, with right hemiplegia and hemianæsthesia. Gradually became quite unconscious, and died on the fourteenth day.

Post-mortem.—Arteries degenerated; no hypertrophy of heart; kidneys apparently natural; large clot occupying the greater part of left centrum ovale, filling the lateral ventricle and lacerating the lenticular nucleus and optic thalamus.

Female, *æt.* 34. Admitted with hæmoptysis; no abnormal signs in lungs. Premature labour at the seventh month occurred on the fifth day, and she died shortly afterwards.

Post-mortem.—Heart hypertrophied; arteries everywhere thickened; tubular nephritis of right kidney; extreme atrophy of left kidney; large hæmorrhage in right hemisphere ploughing up the outer part of corpus striatum and optic thalamus.

Female, *æt.* 50. Partial left hemiplegia and hemianæsthesia, which came on suddenly without unconsciousness; trace of albumen in urine. Died suddenly on the twelfth day.

Post-mortem.—Heart and kidneys healthy; hæmorrhage into right lateral ventricle. The blood seemed to have been effused primarily between the lenticular nucleus and external capsule, and had ploughed up the posterior part of internal capsule and lenticular nucleus.

V.—LOCOMOTOR ATAXY.

Two imperfectly-reported cases are not included.

Male, *æt.* 48. Mother died of "general debility." Patient has had syphilis. Began three and a half years ago with loss of control over bladder and rectum, followed by paralysis of the left sixth nerve; diplopia; loss of sight; numbness and loss of control over legs; occasional lightning pains.

On admission patient was quite blind; left eyeball nearly immovable; external squint of right eye; pupils inactive to light; left larger than right; grey atrophy of discs, more marked on right side. Patellar and triceps reflexes absent; gait markedly ataxic; impaired sensation of both legs, especially the

right. No loss of control over bladder and rectum; absence of sexual power. Whilst in hospital he suffered much from lightning pains.

Male, *æt.* 44. One sister suffers from "nervous debility." Shooting pains for five years; difficulty in walking, especially in the dark, for eighteen months; numbness in feet and legs for three months; no epigastric pain or vomiting.

State on admission not noted.

Male, *æt.* 40. Family history good. No personal history of syphilis. Five years ago, three months after marriage, sight began to fail in left eye, there being also shooting pains in the eyeball and photophobia; six months later the right eye became affected in the same way. Had an attack of vomiting a month ago, not accompanied by pain. Says he has lost two stones in three weeks.

On admission there was no evident weakness or ataxy of legs; patellar and triceps reflexes were absent; plantar reflex slight; some trembling of hands; deafness on both sides; nearly complete blindness. A slight patellar reflex was obtained on left side about a fortnight after admission.

Male, *æt.* 35. Was in the hospital five months ago. His illness began about a year ago.

On admission patient was much depressed. Incontinence of urine; shooting pains; pupils small, left being the larger; do not react to light, but well to accommodation; diplopia; some ataxy. Had an attack of left pleurisy during his stay in hospital.

Male, *æt.* 43. One brother died in infancy from "water in the head." Rheumatism at 25; a chancre, for which he took mercury, at 29; no secondary symptoms. Dimness of sight for three and a half years; shooting pains began four months later; retention of urine five months ago.

On admission he complained of shooting pains. The gait was ataxic; the patellar reflex absent; superficial reflexes unaltered. Left pupil larger than right; nearly complete blindness.

Later, there was a vesicular eruption on left instep, and retention of urine.

Male, *æt.* 50. Rheumatic pains for many years; weakness of legs for four months; numbness of legs and inability to walk in the dark for seven weeks.

On admission both legs were weak; the gait somewhat ataxic; patellar reflex absent; plantar reflex slight; pupils equal and react well to light and accommodation; discs normal; no colour blindness; shooting pains down the legs.

Later some colour blindness was discovered, and patient had much vomiting.

Male, *æt.* 46. Sudden pains in left leg six years ago, followed in about a year by numbness and loss of power in the limb and difficulty of walking in the dark. Sight began to fail three years ago; some loss of control over evacuations for eight months.

On admission the gait was very ataxic; the patellar reflex was absent; there was some numbness of the soles. The pupils were unequal, and did not act to light; there was some diminution in size of retinal arteries; there was also some ptosis and slight weakness of internal rectus on right side.

Male, *æt.* 45. Rheumatic pains in legs for many years. Numbness of right ankle for three years, followed by difficulty in walking. Two or three years ago he had numbness along inner side of right forearm and hand, with inability to write well.

On admission there was impaired sensation of both legs, with some loss of power in right; the patellar and plantar reflexes were absent; the legs and arms were ataxic; there was deafness on both sides.

Male, æt. 37. Rheumatic pains for eight or ten years; tendency to fall forwards and difficulty of walking in the dark for two years; violent attack of vomiting six months ago.

On admission he complained of vomiting with screwing pain at umbilicus. Sensation below the knees was much retarded; the patellar reflex was absent; the arms and legs were very ataxic. The pupils were very small, and had very slight reaction to light; the optic discs were normal; there was no colour blindness and no diplopia.

Female, æt. 42. Attacks of vomiting with epigastric pain for seven years.

On admission there was much wasting of arms and legs; the hands were very ataxic; there was some numbness of fingers; there was some difficulty in walking; the patellar and plantar reflexes were absent. The pupils were small and equal, but did not act to light; there was ptosis and weakness of left superior rectus and diplopia; the optic discs were healthy, and there was no colour blindness.

Female, æt. 28. On admission she had constant vomiting with epigastric pain, from which she had been suffering for about five years. It was found that her gait was ataxic; the patellar reflex absent; there was no marked loss of sensation; there were occasional stabbing pains in the legs.

VI.—AMYOTROPHIC LATERAL SCLEROSIS.

Female, æt. 38. Began two years ago with stiffness of the left arm, followed by a similar condition of the right arm. The legs became stiff about six months ago.

On admission she could not lift the left arm to the head; the limb was rigid, and there was marked atrophy of the muscles around the shoulder, and above and below spine of scapula. She could raise the right arm to head, but the limb was rigid, and the supra- and infra-spinatus muscles much wasted. The reflexes of both arms were much exaggerated. The legs were stiff, and the gait spastic, but there was no muscular atrophy. The patellar-tendon reflexes were exaggerated, and ankle clonus could be obtained occasionally. There was no loss of sensation, and the functions of the bladder and rectum were unaffected. There were no signs of bulbar affection.

SURGICAL REPORT.

1882.

BY WILLIAM HENRY BATTLE, F.R.C.S.

General Statement.

Number of surgical beds	241
„ of patients in hospital January 1st, 1882	227 { Males 123 Females 104
„ „ „ December 31st, 1882	221 { Males 119 Females 102
„ „ treated to a termination during the year 1882	2428

	Total.	Males.	Females.
Discharged cured	1471	820	651
„ relieved	744	529	215
„ unrelieved	45	24	21
Died	168	107	61
	<u>2428</u>	<u>1480</u>	<u>948</u>

Average number of deaths 6·9 per cent.

„ „ days in hospital 30·3.

TABLE I.—*Abstract, showing Diseases, Injuries, &c., in*

DISEASE.	Sex.		Age.									Duration before admission.							
	M.	F.	Under 5	5-10	10-20	20-30	30-40	40-50	50-60	Above 60	Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-6	Mts. 6-12	Chronic.	Not re-	
GENERAL DISEASES.																			
Erysipelas (arising) .	27	12	2	3	7	4	6	5	7	5	...	...	...	...	...	...	...	...
Do. (admitted as such) .	29	12	...	5	4	2	6	8	14	2	20	13	7	1	...	...	...	...
Pyæmia (arising) .	5	...	...	...	2	1	1	1	...	...	...	...	...	...	...	...	...	...
Do. (admitted with it) .	3	1	1	1	2	...	...	...	...	...	1	2	1	...	...	...	...	...
<i>Syphilis</i> —																			
1. Primary, by—																			
Indurated sore .	2	5	...	1	3	2	...	...	1	...	...	...	1	5	1	...	...	...
2. Secondary .	18	2	...	...	47	34	1	1	...	...	...	6	16	17	26	6	3	...
3. Tertiary .	1	5	...	...	...	5	...	...	...	...	...	...	2	2	1	1	...	...
4. Congenital .	...	3	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...
LOCAL DISEASES.																			
TUMOURS.																			
<i>Carcinomata</i> —																			
<i>Scirrhus</i> of—																			
a. Tongue .	1	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...
b. Breast .	...	24	...	...	...	1	3	14	1	5	...	...	...	1	8	6	9	...
c. Do. (recurrent) .	...	5	...	...	...	...	...	4	1	...	...	1	...	2	1	...	...	...
d. Glands .	...	2	...	...	...	...	...	...	1	1	...	...	...	...	2	...	...	...
e. Rectum .	2	1	...	...	...	...	...	2	...	1	...	...	...	...	3	...	...	...
f. Uterus .	...	1	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...
<i>Encephaloid</i> —																			
a. Breast .	...	2	...	...	...	...	...	...	...	2	...	...	1	...	...	...	1	...
b. Glands .	...	1	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...
<i>Epithelioma</i> —																			
a. Tongue .	10	1	...	...	...	...	3	2	2	4	...	...	...	1	4	6	...	...
b. Mouth .	3	1	...	...	...	...	...	1	2	1	...	...	...	1	1	2	...	...
c. Lip .	6	...	...	...	...	...	...	...	1	5	...	...	...	...	...	1	5	...
d. Glands .	3	...	...	...	...	...	2	...	1	...	...	...	1	...	2	...	...	...
e. Head .	2	1	...	...	...	...	...	1	1	1	...	...	...	...	1	...	2	...
f. Extremities .	2	...	...	...	...	...	...	1	...	1	...	...	...	1	...	...	1	...
g. Generative organs	...	3	...	...	...	...	2	1	...	...	...	...	...	...	1	1	1	...
h. Digestive tract	1	4	...	...	...	...	...	2	1	2	...	...	...	...	1	3	1	...
<i>Sarcomata</i> —																			
a. Upper jaw .	4	3	1	...	...	...	...	2	...	4	...	...	...	...	6	1	...	...
b. Lower jaw .	...	2	...	...	...	...	...	2	...	...	...	...	...	...	1	...	1	...
c. Nostril .	1	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...
d. Upper extremity	3	1	...	...	1	...	3	...	...	...	...	...	...	...	3	...	1	...
e. Lower extremity	1	1	...	...	...	1	...	1	...	...	...	...	...	...	...	2	...	...
f. Breast .	...	5	...	...	...	...	...	3	1	1	...	...	...	...	2	1	2	...
g. Testis .	2	...	1	...	...	...	1	...	...	...	...	...	...	...	1	1	...	...
h. Parotid region	...	2	...	...	...	...	1	...	1	...	...	...	...	...	...	...	2	...
Osteo-sarcoma .	1	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...
Enchondroma .	2	2	...	1	...	...	...	...	3	...	...	...	...	...	...	...	4	...

Classes, according to authorised Nomenclature.

Duration of residence.										Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Above a year.		C.	R.	U.	D.	
...	4	3	17	10	3	...	1	1	28	3	...	8	1	1 admitted for erysipelas.
2	10	12	9	7	1	...	...	...	38	1	...	2	1	septicæmia, 1 delirium.
...	2	1	1	1	...	...	...	...	1	...	...	4	...	See Special Table.
2	2	...	...	...	...	...	...	...	...	...	...	4	...	Acute periostitis of humerus 1, femur 1.
...	1	2	3	1	...	...	...	...	5	2	...	...	...	Phimosis 2, lip 2.
...	3	24	32	20	4	...	...	...	72	11	...	...	...	See Special Table.
...	...	2	2	...	2	...	...	...	4	2	...	...	...	...
...	...	...	...	...	...	...	...	...	...	3	...	...	...	1 suffering from soft sore, 1 gonorrhœa.
...	1	...	...	...	...	...	...	...	...	...	...	1	...	...
2	3	4	12	3	...	...	...	...	18	3	1	2	...	...
...	...	3	2	...	...	...	...	...	4	1	...	...	...	...
...	1	1	...	...	...	...	...	...	1	...	...	1	...	Hæmorrhage.
...	2	...	...	1	...	...	...	...	...	2	1	...	...	...
...	...	...	...	1	...	...	...	...	...	1	...	...	...	Treated by erosion and perchloride of iron.
...	...	1	...	1	...	...	...	...	1	1	...	...	...	1 recurrent.
...	...	...	1	...	...	...	...	...	1	...	...	...	...	...
1	3	4	1	2	...	...	...	...	4	2	2	3	...	1 admitted with extravasation of urine.
...	1	1	2	...	...	...	...	...	1	1	1	1	...	...
...	1	3	1	1	...	...	...	...	6	...	...	...	...	...
...	1	...	2	...	...	...	...	...	1	2	...	...	...	Submaxillary, secondary to epithelioma of lip.
...	...	1	1	1	...	...	...	...	3	...	...	...	...	Face 2, scalp 1.
...	...	...	2	...	...	...	...	...	2	...	...	...	...	Heel 1, hand 1.
...	...	...	1	1	1	...	...	...	1	1	...	1	...	...
...	...	1	2	1	1	...	...	...	1	1	...	3	...	Pharynx 1, œsophagus 2, rectum 2.
...	3	3	...	1	...	...	...	...	2	4	1	...	...	...
...	2	...	...	...	...	...	...	...	1	...	...	1	...	Erysipelas.
...	...	...	1	...	...	...	...	...	...	1	...	...	...	...
...	2	1	...	1	...	...	...	...	3	1	...	...	...	...
...	1	1	...	...	...	...	...	...	1	...	1	...	...	...
...	...	1	2	2	...	...	...	...	5	...	...	...	...	...
...	...	...	2	...	...	...	...	...	1	1	...	...	...	...
...	...	2	...	...	...	...	...	...	2	...	...	...	...	Parotid 1, melanotic 1.
...	1	...	...	...	...	...	...	...	...	1	...	...	...	Rib.
...	...	2	2	...	...	...	...	...	4	...	...	...	...	Hand 1, humerus 1, parotid 2.

TABLE I.—*Abstract, showing Diseases, Injuries, &c., in*

DISEASE.	Sex.		Age.								Duration before admission.								
	M.	F.	Under 5	5-10	-20	-30	-40	-50	-60	Above 60	Dys. 1-4	Dys. 5-13	Wks. 2-4	Mts. 1-2	Mts. 2-6	Mts. 6-12	Chronic	Not re-ported	
LOCAL DISEASES.																			
TUMOURS— <i>continued.</i>																			
Adenoma—																			
Breast	9	...	...	1	5	2	1	...	...	...	...	...	...	2	3	4	...	...
Lipoma	1	8	...	...	2	2	2	2	...	1	...	...	1	2	1	1	4	...
Papilloma	1	2	...	1	1	1	...	...	...	...	...	...	...	1	...	2	...	...
Angioma	2	2	1	1	...	2	...	...	...	...	...	...	...	1	...	3	...	...
Exostosis	4	4	...	...	6	1	1	...	...	...	...	...	...	1	1	4	2	...
Neuroma	2	1	...	1	1	...	...	1	...	...	...	...	...	...	...	3	...	...
Myo-fibroma	8	...	...	...	...	1	7	...	...	...	...	...	...	...	1	7	...	...
Molluscum	1	1	...	1	...	...	...	1	...	...	...	...	...	...	...	2	...	...
Nævus vascularis	2	6	3	1	3	1	...	...	...	...	...	...	...	...	...	8	...	...
Polypus	1	2	...	...	...	1	...	2	...	...	...	...	...	...	...	3	...	...
Rodent ulcer	2	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	2
Lupus	4	3	...	1	4	2	...	...	...	...	...	...	...	...	1	...	6	...
Keloid	3	...	...	...	1	2	...	...	...	...	...	...	...	...	...	3	...	...
Lymphadenoma	5	...	...	3	1	1	...	...	...	...	...	...	...	...	3	...	2	...
Cystic—																			
a. Ovarian	21	...	...	1	7	2	8	2	1	...	...	1	...	3	9	8	...	...
b. Sebaceous	2	1	...	...	2	...	1	...	...	...	...	...	...	...	...	3	...	...
c. Dermoid	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...
d. Hydatid	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...
e. Other cysts	2	5	...	...	2	4	...	1	...	...	...	...	...	1	1	2	3	...
NERVOUS SYSTEM.																			
Tetanus	1	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...
Infantile paralysis	1	1	...	1	1	...	...	...	...	...	...	...	...	...	...	...	2	...
Paralysis of leg	1	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...
CIRCULATORY SYSTEM.																			
Aneurism	7	2	...	1	1	1	2	1	2	1	1	...	...	5	1	...	2	...
Varicose veins	2	2	...	...	1	2	1	...	...	...	...	...	...	...	...	4	...	...
Phlebitis	1	3	...	...	...	2	1	...	1	...	1	1	...	2	...	...	...	...
Thrombosis of veins	1	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...
Hæmorrhage	12	4	...	2	2	5	1	5	...	1	2	...	1	...	...	...	...	...
Gangrene	5	1	...	...	...	1	1	1	3	1	1	1	1	1	...	1	...	...
GLANDULAR SYSTEM.																			
Inflammation	1	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
Abscess	13	3	5	2	2	3	1	2	1	...	1	2	8	1	4	...	...	...
Caseous degeneration	3	4	...	2	2	3	...	...	...	...	...	...	...	1	1	5	...	...
Lymphatic obstruction	1	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...
„ inflammation	5	3	...	...	2	1	1	4	...	...	2	5	1	...	...	...	...	...

Classes, according to authorised Nomenclature—continued.

Duration of residence.										Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Above a year.		C.	R.	U.	D.	
1	1	4	3	...	...	...	...	...	8	...	...	1	...	Fatal case from granular kidney; no operation.
...	4	4	...	1	...	...	...	...	8	1	...	...	...	Back 6, thigh 2, abdominal wall 1.
1	...	1	...	1	...	...	...	...	3	...	...	...	...
...	1	1	1	1	...	...	...	...	3	1	...	...	...
1	3	4	1	...	...	...	...	...	5	2	1	...	...	Subungual 5, ears 2, 1 bilateral, rib 1.
1	...	1	1	1	...	...	...	...	3	...	...	...	...
2	1	2	...	1	2	...	...	...	5	...	3	...	...
...	1	...	...	...	...	1	...	...	1	1	...	...	...	With hæmorrhoids 1, hairy pigmented 1.
...	1	...	5	1	1	...	...	...	5	3	...	...	...
1	...	1	1	...	...	...	...	...	2	1	...	...	...	Myxoma, nasal 2.
...	1	1	...	...	...	...	...	...	2	...	...	...	...
1	...	1	4	...	1	...	...	...	5	2	...	...	...
...	...	1	...	2	...	...	...	...	1	2	...	...	...
...	2	2	...	...	1	...	...	...	4	...	1	...	...
...	7	3	8	2	...	...	...	...	8	4	...	9	1	1 suffering from parametritis.
...	...	2	1	...	...	...	...	...	3	...	...	...	...	1 case operated on for scirrhus of breast.
...	...	1	...	...	...	...	...	...	1	...	...	...	...	Face.
...	...	...	...	1	...	...	...	...	1	...	...	...	...	Abdomen.
1	1	5	...	...	...	...	...	...	4	2	1	...	...	Galactoceles 1, cyst of cord 1, ranula 1; of neck 2, one malignant; of upper jaw 2.
1	...	...	...	...	...	...	...	...	...	...	...	1	...	Ulcer of leg.
...	1	...	1	...	...	...	...	...	1	1	...	...	...	Amputation 1.
...	...	1	...	...	...	...	...	...	...	1	...	...	...	To medical side, where he died from phthisis.
...	2	2	5	...	...	...	...	...	5	...	...	4	...	Innominate 2, axillary 1, femoral 2, popliteal 2, false 2.
1	...	2	1	...	...	...	...	...	3	1	...	...	...	Excision of part of vessel 3.
...	1	3	...	...	...	...	...	...	4	...	...	...	...	Abscess formed 2.
...	...	1	...	...	...	...	...	...	1	...	...	...	...	Axillary.
3	7	6	...	...	...	...	...	...	15	...	...	1	...	Primary 5, secondary 4, epistaxis 2, ruptured vein 3, urethral 2.
...	1	2	1	1	...	...	1	...	3	1	...	2	...	Renal disease 2. One also Diabetes.
...	...	1	...	...	...	...	...	...	1	...	...	...	...
1	7	7	...	1	...	...	...	...	15	1	...	...	...	Neck 5, axilla 2, groin 7, popliteal 1, supracondyloid 1.
...	...	3	4	...	...	...	...	...	6	1	...	...	...	All cervical; 6 removals, 1 incised.
...	...	...	1	...	...	...	...	...	1	...	...	...	...	Left leg.
...	1	7	...	...	...	...	...	...	8	...	...	...	...

Classes, according to authorised Nomenclature—continued.

Duration of residence.										Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Above a year.		C.	R.	U.	D.	
1	...	...	...	...	...	...	...	...	1	...	...	...	...
...	...	3	1	...	...	...	...	...	4	...	...	...	...
...	1	...	...	...	...	...	...	...	1	...	...	...	...
...	1	...	1	...	...	...	...	...	1	1	...	...	...	Old cases of tracheotomy, one 5 years.
1	...	...	...	...	...	...	...	...	1	1	...	...	...	Acute.
...	...	1	...	1	...	...	...	...	2	...	...	...	...	Tracheotomy 1, probably epithelioma.
...	1	...	...	...	...	...	...	...	...	...	...	1	...	Erysipelas followed by pyæmia.
1	...	...	...	...	...	...	...	...	1	...	...	...	...
1	...	...	...	...	...	...	...	...	1	...	...	...	...
...	...	...	1	...	...	...	...	...	1	...	...	...	...	Removal.
...	...	...	...	...	...	...	...	...	...	...	...	...	...	See Epithelioma.
6	5	5	1	1	...	...	...	...	8	5	...	5	...	See Special Table—Hernia.
3	1	5	4	1	...	...	...	...	8	...	...	6	...	ditto ditto
1	...	1	...	...	...	...	...	...	1	...	...	1	...	
1	2	...	1	2	...	...	...	...	2	4	...	...	...
...	1	...	...	...	...	...	...	...	1	...	...	...	...
1	3	...	...	...	...	...	...	...	3	...	...	1	...	
...	...	1	...	...	...	...	...	...	1	...	...	...	...
4	2	...	2	...	...	...	...	...	1	...	...	7	...	
1	...	...	1	...	...	...	...	...	...	...	...	2	...	
1	5	6	1	...	...	...	...	...	7	6	...	...	...
...	1	1	1	1	...	...	...	...	4	...	...	...	...	Phthisis 1, phthisis and diabetes 1, asthma and hæmorrhoids 1, albuminuria 1.
...	3	1	1	...	...	...	...	...	5	...	...	...	...
...	...	1	1	...	1	...	...	...	3	...	...	...	...	With fistula in ano 1.
...	...	3	3	1	...	...	...	...	4	3	...	...	...	Incision 2, dilatation 2, colotomy 1, malignant 2.
1	5	9	6	1	1	...	...	...	17	5	...	1	...	Hæmophilia, fatal 1.
...	1	...	1	...	...	...	...	...	2	...	...	...	...	After operation for imperforate rectum 1, stricture 1.
...	2	...	...	...	...	...	...	...	1	1	...	...	...
1	...	...	...	...	...	...	...	...	1	...	...	...	...
...	1	3	...	1	...	...	...	...	5	...	...	...	...
1	...	3	1	...	...	...	...	...	4	2	...	...	...	Operation 5.
...	2	1	...	...	...	...	...	...	1	2	...	...	...	Gonorrhœa 1, tubercular 2.
1	...	...	...	...	...	...	...	...	...	1	...	...	...	Chronic.
...	...	...	...	1	...	...	...	...	1	...	...	...	...	Operation.

TABLE I.—Abstract, showing Diseases, Injuries, &c., in

DISEASE.	Sex.		Ages.								Duration before admission.							
	M.	F.	Under 10	5-10	-20	-30	-40	-50	-60	Above 60	Dys. 1-4	Dys. 5-13	Wks. 2-4	Mts. 1-2	Mts. 2-6	Mts. 6-12	Chronic.	Not reported
GENITO-URINARY SYSTEM—																		
<i>continued.</i>																		
Diphtheria pudendi . . .	...	1	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Ulcer of vulva . . .	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
Vesical irritation . . .	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...
Atony of bladder . . .	1	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...
Cystitis . . .	3	1	...	1	...	...	2	...	...	1	...	...	1	...	2	...	...	1
Retention of urine . . .	14	...	1	...	...	2	3	5	2	1	13	1	...	...	...	...	...	...
Stricture of urethra . . .	26	...	...	...	...	7	10	6	3	...	...	...	...	...	4	...	22	...
Perineal abscess . . .	6	...	...	...	...	1	2	1	2	...	1	3	...	1	1	...	...	...
Urinary fistula . . .	7	...	...	...	...	1	3	2	1	...	...	1	1	...	2	...	3	...
Extravasation of urine . . .	7	...	...	1	...	...	1	2	2	1	5	1	1	...	...	...	...	...
Prostatic enlargement . . .	3	...	...	...	...	...	...	...	3	...	...	...	...	...	1	...	2	...
„ inflammation . . .	2	...	...	...	...	2	...	...	...	...	...	1	1	...	...	...	...	...
Malignt. disease of prostate . . .	2	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	2	...
Calculus of bladder . . .	6	...	1	1	...	...	...	3	...	1	...	...	1	...	...	...	4	1
„ of kidney . . .	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...
Hydronephrosis . . .	6	...	...	6	...	...	...	...	...	...	...	...	...	...	...	...	6	...
Renal disease . . .	1	2	...	...	2	...	1	...	...	...	...	...	...	...	...	...	3	...
OTHER AFFECTIONS OF GEN- ERATIVE ORGANS.																		
a. Gonorrhœa . . .	...	67	...	...	48	18	1	...	...	...	3	5	17	10	15	8	9	...
b. Soft sore . . .	9	29	...	...	23	15	...	...	...	...	3	11	14	3	4	...	...	3
DISEASES OF THE BONES.																		
Rachitis . . .	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Periostitis, acute . . .	8	2	4	2	4	...	...	...	...	...	4	5	...	1	...	...	...	...
„ subacute . . .	6	4	...	2	3	3	2	...	...	...	2	2	1	1	2	1	1	...
Otitis . . .	1	1	...	...	1	1	...	...	...	...	...	1	...	...	1	...	...	...
Osteomyelitis, acute . . .	1	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...
Abscess of bone . . .	2	...	...	...	1	...	1	...	...	...	...	...	...	...	1	...	1	...
Necrosis—																		
a. Multiple . . .	1	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...
b. Nasal . . .	...	1	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...
c. Frontal . . .	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...
d. Temporal . . .	1	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...

Classes, according to authorised Nomenclature—continued.

Duration of residence.										Result.				Remarks.
vs.	Dys.	Wks.	Mts.	Mts.	Mts.	Mts.	Mts.	Above		C.	R.	U.	D.	
4	5-13	2-4	1-2	2-4	4-6	6-9	9-12	a year.						
..	1	...	...	...	...	...	...	...	...	...	...	...	1	
..	1	...	...	...	...	...	...	...	...	...	...	...	1	Cystitis and tubercular pyelitis.
..	1	...	...	...	...	...	...	...	...	...	1	...	...
..	1	...	...	...	...	...	...	...	...	...	1	...	...	Enlarged prostate.
..	...	2	1	1	...	...	...	...	...	1	2	...	1	Fatal: renal disease.
1	5	5	...	3	...	...	...	...	...	8	3	...	3	
..	6	5	13	2	...	...	...	...	...	18	4	...	4	
1	2	2	1	...	...	...	...	...	...	5	1	...	...	Stricture 5, gonorrhœa 1; readmission 1.
..	...	1	2	2	1	1	...	...	...	4	3	...	...	Stricture 7; operation 2, catheter 4, internal urethrotomy 1.
2	1	...	2	2	...	...	...	...	...	4	...	...	3	Stricture 6, rupture of urethra 1, fatal pyæmia 1, exhaustion 2.
..	3	...	...	...	...	...	...	...	...	2	...	...	1	Fatal: periprostatic abscess and cystitis.
..	1	1	...	...	...	...	...	...	...	2	...	...	...	Gonorrhœa 2, with cystitis 1.
..	...	2	...	...	...	...	...	...	...	2	...	...	...	Cystitis 1.
3	...	1	1	1	...	...	...	...	...	3	2	1	...	Lateral lithotomy 2.
..	1	...	...	...	...	...	...	...	...	...	...	...	1	Nephrectomy.
..	5	...	...	1	...	...	...	...	...	6	...	...	...	Tapped 7 times; readmissions.
..	1	...	...	1	1	...	...	...	...	...	...	...	3	Suppurative nephritis 1, tubercular pyelitis 2, also ulceration of vulva 1.
2	12	18	21	14	...	...	...	...	61	4	2	...	...
1	2	12	13	9	...	...	1	...	35	2	1	...	...
..	...	...	1	...	...	...	...	...	...	1	...	...	...
1	1	1	...	4	3	...	...	...	6	1	...	...	3	Humerus 2, femur 1, tibia 6, fibula 1. Fatal: pyæmia 2, pericarditis and pleurisy 1. Subsequent sequestrotomy 3, amputation of thigh 2.
1	3	2	4	...	...	...	...	...	7	3	...	...	...	Multiple 1, frontal 1, ulna 1, femur 2, tibia 4, fibula 1; ophthalmoplegia 1, abscess in 3. Causes: injury 3, syphilis 6, rheumatism 1.
..	...	1	1	...	...	...	...	...	2	...	...	...	...	Ulna 1, humerus 1, congenital syphilis 1, acquired syphilis 1.
..	...	1	...	...	...	...	...	...	...	...	...	...	1	Tibia; died from pyæmia.
..	...	...	1	...	1	...	...	...	2	...	...	...	...	Trephined; one ankle-joint invaded.
..	...	...	...	...	...	...	1	...	1	...	...	...	...	Both tibiæ and femur.
..	...	...	1	...	...	...	...	...	1	...	...	...	...	Syphilis.
..	1	...	...	...	...	...	...	...	...	...	...	...	1	Meningitis, syphilis.
..	...	...	1	...	...	...	...	...	...	...	...	...	1	Double optic neuritis, suppurative meningitis.

TABLE I.—Abstract, showing Diseases, Injuries, &c., in

DISEASE.	Sex.		Ages.								Duration before admission.							
	M.	F.	Under 5	5-10	-20	-30	-40	-50	-60	Above 60	Dys. 1-4	Dys. 5-13	Wks. 2-4	Mts. 1-2	Mts. 2-6	Mts. 6-12	Chronic	Not re-
DISEASES OF THE BONES.																		
<i>Necrosis—continued.</i>																		
<i>e. Inferior maxilla</i>	3	1	1	...	...	2	...	1	...	...	...	...	...	1	...	3		
<i>f. Sternum</i>	2	...	...	...	...	2	...	...	...	...	...	...	...	...	...	2		
<i>g. Rib</i>	3	...	...	2	...	1	...	...	...	...	...	...	...	1	...	2		
<i>h. Humerus</i>	3	...	...	1	...	2	...	...	...	...	...	...	...	...	...	3		
<i>i. Ulna</i>	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1		
<i>k. Femur</i>	5	5	1	3	1	1	1	2	1	...	2	1	...	3	2	...	2	
<i>l. Tibia</i>	8	3	...	3	3	...	2	2	...	1	...	...	1	...	5	...	5	
<i>m. Foot</i>	4	3	1	1	2	1	...	1	1	...	...	...	...	2	1	1	3	
<i>n. Hand</i>	...	2	1	...	1	...	...	...	...	...	...	...	...	...	1	...	1	
<i>p. Ilium</i>	2	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	2	
<i>Caries of—</i>																		
<i>a. Mastoid cells</i>	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	
<i>b. Scapula</i>	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	
<i>c. Humerus</i>	1	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...
<i>d. Pelvic bones</i>	...	2	...	...	1	...	...	...	1	...	...	...	...	...	2	...	...
<i>e. Femur</i>	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	
<i>f. Tibia</i>	...	1	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...
<i>g. Bones of foot</i>	7	6	1	1	6	2	2	1	...	...	...	...	1	...	3	3	6	
<i>h. „ hand</i>	3	1	...	1	1	1	...	1	...	...	...	...	...	...	2	1	1	
DISEASES OF JOINTS.																		
Shoulder	4	1	...	1	2	2	...	...	...	...	...	...	1	...	3	...	1	
Elbow—																		
<i>a. Chronic</i>	5	3	2	2	2	1	...	...	...	1	...	...	...	...	...	2	6	
<i>b. Anchylosis</i>	4	1	...	...	3	2	...	...	...	...	...	...	...	...	3	...	1	
Wrist	1	1	...	...	1	1	...	...	...	...	1	1	...	...	...	...	...
Sacro-iliac	2	...	...	1	...	...	...	1	...	...	...	...	...	...	1	...	1	
Hip—																		
<i>a. Incipient</i>	11	8	7	5	7	...	...	...	...	...	1	2	2	4	6	4	...	
<i>b. Chronic</i>	22	17	5	13	11	7	2	...	1	...	...	...	1	...	5	6	27	
<i>c. Anchylosis</i>	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
<i>d. Old excision</i>	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	
<i>e. Hysterical</i>	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	
Knee—																		
<i>a. Incipient</i>	11	6	...	1	5	8	2	1	...	...	...	...	3	3	6	4	1	
<i>b. Chronic</i>	26	16	3	7	16	10	1	4	1	...	...	...	2	...	4	3	33	
<i>c. Anchylosis</i>	3	6	...	2	3	1	1	1	1	...	...	...	...	1	2	2	4	
<i>d. Old excision</i>	4	3	...	4	3	...	...	...	...	...	...	...	...	...	1	5	1	
<i>e. Rheumatoid</i>	3	2	...	...	1	1	1	1	...	1	...	1	1	1	...	1	1	

Classes, according to authorised Nomenclature—continued.

Duration of residence.									Result.				Remarks.
a.	Dys.	Wks	Mts.	Mts.	Mts.	Mts.	Mts.	Above	C.	R.	U.	D.	
4	5-13	2-4	1-2	2-4	4-6	6-9	9-12	a year.					
1	1	1	1	...	...	...	...	...	3	1	...	...	Phosphorus 1; with carpal disease 1.
1	...	...	1	...	...	...	...	...	1	1	...	...
1	...	1	1	...	...	...	...	...	2	...	1	...	Pneumonia after erysipelas on readmission, fatal.
1	1	2	...	...	...	...	...	...	2	1	...	...	One readmission.
...	...	...	1	...	...	...	...	...	1	...	...	...
1	...	...	4	3	2	...	...	...	7	2	...	1	Fatal: amputation, meningitis, septicæmia 1; suppuration in knee 2.
1	1	1	3	6	...	...	...	...	9	2	...	...	Necrosis of phalanx 1, suppuration in knee 1.
...	...	3	3	...	...	...	1	...	5	2	...	...	Metatarsal 4, phalanx 1, os calcis 2; 1 also of ilium.
...	...	...	2	...	...	...	...	...	2	...	...	...	With necrosis of inferior maxilla 1.
1	...	1	...	...	...	...	...	...	1	1	...	...	1 also of os calcis.
...	...	...	...	1	...	...	...	...	1	...	...	...	Trephining of mastoid; also polypus.
...	...	...	1	...	...	...	...	...	1	...	...	...	Old case shoulder excision; phthical.
...	...	1	...	...	...	...	...	...	1	...	...	...
...	...	...	1	...	1	...	...	...	2	...	...	...	Abscess 2, phthical 1; 1 also of hand.
...	...	...	...	1	...	...	...	...	1	...	...	...
...	1	1	2	5	2	2	...	...	5	8	...	...	Os calcis 3, amputation of leg 1, Syme 4, partial operation 3.
...	...	1	...	1	2	...	...	...	4	...	...	...	1 also of pelvis, of tarsus 1, of tarsus and elbow 1; operation 1 case.
...	...	3	...	2	...	...	...	...	3	2	...	...	After confinement 1, excision 2.
2	...	...	1	2	2	1	...	...	4	4	...	...	Sinuses 5, excision 3, amputation 1; also of hip 1, of tarsus and carpus 1.
...	...	3	...	...	...	2	...	...	2	3	...	...	Excision 1, passive motion 4.
...	...	2	...	...	...	...	...	...	1	1	...	...	1 Rheumatism.
...	...	...	1	1	...	...	...	...	2	...	...	...
...	5	6	2	3	2	...	1	...	10	7	...	2	
2	2	3	8	10	5	4	4	1	16	21	...	2	Also of elbow 1.
...	1	...	...	...	...	...	...	...	...	1	...	...
...	1	...	...	...	...	...	...	...	...	1	...	...
...	...	...	...	1	...	...	...	...	1	...	...	...	Both hips.
...	4	8	4	1	...	...	...	...	5	12	...	...
...	3	14	10	6	5	2	1	1	17	24	...	1	
1	1	7	1	3	...	...	...	...	5	4	...	...
1	...	2	2	2	...	...	...	...	2	5	...	...
...	1	1	1	2	...	...	...	...	3	2	...	...

TABLE I.—*Abstract, showing Diseases, Injuries, &c., in*

[illegible]

Classes, according to authorised Nomenclature—continued.

Duration of residence.										Result.				Remarks.
ys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Above a year.		C.	R.	U.	D.	
...	...	1	1	1	...	...	...	...	2	1	...	...	...
...	3	2	3	...	...	2	...	...	2	9	...	...	...
...	1	...	...	...	...	...	...	...	...	1	...	...	...
...	2	...	...	...	...	...	...	...	...	2	...	...	...
...	3	2	3	...	...	...	...	...	2	6	...	...	...	Big toe 3, one double; tarsal joints 5, puerperal 1, gonorrhœal 1.
...	1	...	...	...	...	...	...	...	...	1	...	...	...
2	5	6	6	7	2	2	...	...	4	22	1	3	...	Cervical 4, dorsal 21, lumbar 4, dorsal and lumbar 1. Abscesses, psoas 6; lumbar 4, iliac 2; sinuses, gluteal 3, lumbar 2, paraplegia 4, pleurisy 2, empyema 1.
1	1	...	...	...	...	...	...	...	...	2	...	...	...
1	...	...	...	...	...	...	...	...	...	...	...	1	...	4½ months after injury.
1	3	4	1	...	...	...	...	...	2	7	...	...	...	Double 5, left foot 4; with clavus 3.
...	...	...	2	...	...	...	...	...	1	1	...	...	...	Double 1, right 1.
...	...	3	...	1	...	...	...	...	3	1	...	...	...	Double 3, right 1.
1	...	...	...	...	...	...	...	...	...	1	...	...	...	Double 1.
...	...	...	1	...	...	...	...	...	1	...	...	...	...	Excision of joint.
1	1	1	...	...	...	...	...	...	2	...	...	...	...	1 hysterical.
1	1	...	3	6	1	1	...	...	7	5	1	...	...	Double 8, right 1, left 3; also curved tibiæ 1.
1	...	...	...	...	...	...	...	...	...	...	1	...	...
...	1	4	...	1	1	1	1	...	3	6	...	...	...	Double osteotomy 3; 1 with double genu valgum.
...	1	1	3	...	...	...	...	...	2	3	...	...	...	Tibia and fibula 4, femur 1.
...	...	...	1	2	...	...	...	...	1	2	...	...	...	Knee 2, ankle 1.
...	2	...	...	3	2	1	...	...	4	4	1	...	...	After burn or scald 5, injury 4. Genitals 1, hand 3, foot 1, neck 3, face 1.
...	...	...	1	...	1	...	...	...	1	1	2	...	...	Dupuytren's of hand 3, also of foot 1; toes, both feet, 1.
...	...	1	...	...	...	...	...	...	...	...	...	...	1	
...	...	...	...	...	...	...	...	...	...	...	...	...	1	
...	1	2	1	...	...	...	...	...	2	2	1	...	...	Also cleft palate 2; previous operation in 2, double 1.
...	2	4	3	2	...	...	...	...	6	1	6	...	...	With hernia 1, soft palate only 6, complete 2; also harelip 2, harelip already cured 2.
...	...	...	...	...	...	...	...	...	1	...	...	...	1	
...	...	...	1	1	...	...	...	...	2	1	...	...	...	Æt. 36, readmitted.

TABLE I.—Abstract, showing Diseases, Injuries, &c., in

DISEASE.	Sex.		Ages.									Duration before admission.							
	M.	F.	Under 5	5-10	-20	-30	-40	-50	-60	Above 60	Dys. 1-4	Dys. 5-13	Wks. 2-4	Mts. 1-2	Mts. 2-6	Mts. 6-12	Chronic.	Not re-	
APPENDAGES TO MUSCULAR SYSTEM.																			
Thecal suppuration . . .	3	2	...	...	1	1	1	2	...	...	1	2	1	1	...	...	...	...
Ganglion . . .	2	3	...	...	...	3	2	...	...	...	...	...	...	...	...	...	...	5
Bursæ—																			
1. Inflammation—																			
Bursa prepatellaris . . .	...	3	...	...	2	1	...	...	...	...	1	...	2	...	...	...	...	...
2. Suppuration—																			
a. Over olecranon . . .	1	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...
b. Bursa prepatellaris . . .	5	8	...	...	10	...	2	1	...	...	3	9	1	...	...	...	...	...
3. Enlargement—																			
a. Over olecranon . . .	1	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...
b. Popliteal . . .	2	...	...	1	...	1	...	...	...	...	...	...	1	1	...	...	...	...
c. Bursa prepatellaris . . .	2	5	...	...	...	3	3	1	...	...	...	...	...	...	1	1	5	...
CELLULAR TISSUE.																			
Sinus . . .	9	6	...	3	5	1	1	2	2	1	...	1	1	1	6	2	4	...	
Abscess—																			
a. Submaxillary . . .	...	1	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...
b. Shoulder . . .	...	1	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...
c. Axillary . . .	4	1	2	1	1	...	1	...	...	...	2	2	1	...	...	...	...	...
d. Chest wall . . .	1	3	...	...	...	1	1	...	...	2	...	1	1	...	...	...	...	2
e. Arm . . .	3	...	1	1	1	...	...	...	...	...	...	1	1	1	...	...	...	...
f. Hand . . .	...	1	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...
g. Lumbar . . .	3	1	...	3	...	1	...	...	...	...	...	1	...	2	1	...	...	...
h. Pelvic . . .	1	3	...	1	...	2	...	1	...	...	...	...	3	1	...	...	...	...
i. Abdominal . . .	...	2	1	1	...	...	...	...	...	...	...	...	...	1	1	...	...	...
j. Rectal . . .	2	...	...	...	...	1	...	1	...	...	1	...	1	...	...	...	...	...
k. Scrotum . . .	1	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...
l. Hip and buttock . . .	4	...	...	...	...	1	2	...	1	...	...	...	3	...	1	...	...	...
m. Thigh . . .	8	2	3	3	2	1	...	...	1	...	...	...	6	1	3	...	...	...
n. Leg . . .	9	1	1	3	3	2	1	...	...	...	3	5	2	...	...	...	...	...
o. Foot . . .	2	...	...	...	1	...	1	...	...	...	...	2	...	...	...	...	...	...
Cellulitis—																			
a. Neck . . .	1	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...
b. Upper extremity . . .	7	1	...	1	...	4	2	1	...	...	3	5	...	...	...	...	...	...
c. Lower extremity . . .	5	...	...	...	...	2	...	1	2	...	2	1	1	1	...	...	...	...
Carbuncle . . .	3	...	...	...	...	1	...	2	...	...	1	2	...	...	...	...	...	...

Classes, according to authorised Nomenclature—continued.

Duration of residence.										Result.				Remarks.
ys.	Dys.	Wks	Mts.	Mts.	Mts.	Mts.	Mts.	Above		C.	R.	U.	D.	
4	5-13	2-4	1-2	2-4	4-6	6-9	9-12	a year.						
..	...	2	2	1	...	...	...	...	5	...	...	...	...	Fingers: right hand 4, left 1.
..	1	2	2	...	...	...	...	...	2	3	...	...	...	Compound of wrist 3, flex. carp. rad. 1, flexors of foot 1.
..	3	...	...	...	...	...	...	...	3	...	...	...	...	Aspiration 1, right 3.
..	...	1	...	...	...	...	...	...	1	...	...	...	...	Left.
..	4	7	2	...	...	...	...	...	11	2	...	...	...	Right 6, left 7; incision 10.
..	1	...	...	...	...	...	...	...	...	1	...	...	...	Left.
..	1	...	1	...	...	...	...	...	2	...	...	...	...	Left 1, right 1; incision 1.
..	...	6	1	...	...	...	...	...	6	1	...	...	...	Right 7; removal 6, incision 1.
..	4	7	3	1	...	...	...	...	7	8	...	...	...	Thigh 3, hip 5, toe 1, leg 2, groin 1, breast 1, axilla 1, abdominal 1.
..	1	...	...	...	...	...	...	...	1	...	...	...	...
..	...	...	...	1	...	...	...	...	1	...	...	...	...
1	2	1	...	1	...	...	...	...	4	...	...	1	...	Fatal case: pleurisy.
..	1	2	1	...	...	...	...	...	3	1	...	...	...	Pectoral region; one readmission.
..	1	1	1	...	...	...	...	...	3	...	...	...	...
..	1	...	...	...	...	...	...	...	1	...	...	...	...
..	...	3	1	...	...	...	...	...	3	1	...	...	...
..	...	3	...	1	...	...	...	...	3	1	...	...	...	Iliac 3, parametric 1.
..	1	...	1	...	...	...	...	...	1	1	...	...	...
..	1	...	1	...	...	...	...	...	2	...	...	...	...	Ischio-rectal 1, rectal 1.
..	...	1	...	...	...	...	...	...	1	...	...	...	...	After operation for varicocele.
..	1	2	...	1	...	...	...	...	2	1	...	1	...	Hip 1, gluteal 3.
..	...	4	3	2	1	...	...	...	9	1	...	...	...
1	3	3	3	...	...	...	...	...	7	3	...	...	...
..	...	1	1	...	...	...	...	...	2	...	...	...	...
..	...	...	1	...	...	...	...	...	1	...	...	...	...
1	2	3	1	1	...	...	...	...	7	...	...	1	...	Arm 6, hand 2, after wound of bursa 4.
..	...	4	1	...	...	...	...	...	5	...	...	...	...	Thigh 1, leg 4; one with eczema.
..	1	2	...	...	...	...	...	...	3	...	...	...	...	Lower lip, neck, shoulder.

TABLE I.—*Abstract, showing Diseases, Injuries, &c., in*

DISEASE.	Sex.		Ages.								Duration before admission.							
	M.	F.	Under 15	5-10	20	30	40	50	60	Above 60	Dys. 1-4	Dys. 5-13	Wks. 2-4	Mts. 1-2	Mts. 2-6	Mts. 6-12	Chronic.	Not re-ported
CELLULAR TISSUE— <i>con- tinued.</i>																		
Boil	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...
Gumma	3	1	...	...	1	1	1	...	...	1	...	...	1	...	1	...	2	...
Painful cicatrix . . . . .	...	1	...	...	1	...	...	...	...	...	...	...	...	...	1	...	1	...
Ingrowing toe-nail	2	1	...	...	2	1	...	...	...	...	...	...	...	...	1	1	1	...
Conical stump	2	...	...	...	2	...	...	...	...	...	...	...	...	...	1	...	1	...
Ulcer—																		
<i>a.</i> Axillary . . . . .	...	1	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...
<i>b.</i> Arm	1	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
<i>c.</i> Thigh	1	1	...	...	1	1	...	...	...	...	...	...	...	...	...	...	2	...
<i>d.</i> Leg	13	11	...	...	...	6	5	8	3	2	...	...	1	1	3	4	15	...
<i>e.</i> Stump	2	1	...	...	1	...	2	...	...	...	...	...	...	...	...	2	1	...
Eczema	1	1	...	...	...	...	...	...	2	...	...	...	...	...	...	...	2	...
Erythema nodosum . . . . .	...	1	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...

Classes, according to authorised Nomenclature—continued.

Duration of residence.									Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Above a year.	C.	R.	U.	D.	
..	1	...	...	...	...	...	...	...	1	...	...	...	Back.
..	1	2	...	...	1	...	...	...	2	2	...	...	Syphilitic induration 1.
..	...	...	1	...	...	...	...	...	...	1	...	...	Forearm after wound.
1	1	1	...	...	...	...	...	...	3	...	...	...	Big toe 3.
..	...	1	...	...	...	...	...	..	2	...	...	...	Arm 1, thigh 1.
..	...	...	...	1	...	...	...	...	1	...	...	...	Syphilitic.
1	...	...	...	...	...	...	...	...	...	1	...	...	After burn.
..	...	1	...	1	...	...	...	...	1	1	...	...
1	5	9	6	4	...	...	...	...	20	3	1	...	Varicose 6, syphilitic 7, traumatic 6, ? 5, of which in 2 a history of paralysis; right leg 6, left 9, both 9.
..	...	1	1	1	...	...	...	...	3	...	...	...	Leg 2, thigh 1.
..	1	1	...	...	...	...	...	...	1	1	...	...	Leg; one with cellulitis.
..	1	...	...	...	...	...	...	...	...	1	...	...

TABLE II.—

INJURIES.	Sex.		Ages.								Duration before admission.							
	M.	F.	Under 5	5-10	-20	-30	-40	-50	-60	Above 60	Under 1 hour.	Hrs. 1-6	Hrs. 7-12	Hrs. 13-24	Dys. 1-3	Dys. 3-6	Above 6 days.	Not re-
GENERAL INJURIES.																		
Burns	14	12	7	6	6	2	1	3	...	1	1	22	...	1	2	...	...	...
Scalds	12	11	17	3	2	...	1	...	...	...	2	16	1	2	1	1	...	...
GENERAL CONTUSIONS																		
	2	...	...	...	...	...	1	...	...	1	...	2	...	...	...	...	...	...
LOCAL INJURIES.																		
<i>Injuries of the head—</i>																		
Contusion . . .	4	1	...	...	1	1	2	1	...	...	...	4	...	...	1	...	...	...
Scalp wounds .	39	14	5	5	7	9	7	8	4	8	...	...	...	...	1	...	...	...
Concussion . .	32	5	7	10	8	4	3	2	1	2	19	13	2	1	1	...	1	...
Fracture—Vault:																		
Simple	2	1	1	...	1	1	...	...	...	...	3	...	...	...	...	...	...	...
Compound . .	5	1	...	...	3	...	1	1	...	1	2	4	...	...	...	...	...	...
" depressed .	5	1	3	1	...	1	...	...	...	1	3	2	...	...	...	...	1	...
Of base	8	3	1	1	3	2	2	1	1	...	5	5	...	1	...	...	...	...
<i>Injuries of the face—</i>																		
Wounds	5	3	3	...	1	2	1	...	1	...	3	3	...	...	2	...	...	...
Fracture—Nasal .	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...
Malar . . .	2	...	...	1	...	...	...	...	1	...	1	1	...	...	...	...	...	...
Sup. maxilla .	2	...	...	2	...	...	...	...	...	...	2	...	...	...	...	...	...	...
Inf. maxilla .	...	1	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...
<i>Injuries of the eye—</i>																		
Injury to eyeball .	4	2	1	...	1	2	1	1	...	...	6	...	...	...	...	...	...	...
<i>Injuries of the mouth—</i>																		
Wounds	2	1	2	...	1	...	...	...	...	...	2	...	...	...	...	...	1	...
<i>Injuries of the neck—</i>																		
Wound of	8	2	...	...	...	...	1	2	3	4	4	6	...	...	...	...	...	...
Sprain of	2	...	...	...	...	1	...	...	1	...	...	...	...	...	1	1	...	...
<i>Injuries of the chest—</i>																		
Contusion . . .	3	...	...	...	1	...	...	1	1	...	2	1	...	...	...	...	...	...
Fracture—Ribs .	19	2	2	1	...	1	7	3	2	5	6	8	...	2	3	...	1	...
Sternum . .	3	...	...	...	...	1	1	...	...	1	1	2	...	...	...	...	...	...

Injuries.

Duration of residence.										Result.				Remarks.
ys.	Dys.	Wks	Mts.	Mts.	Mts.	Mts.	Mts.	Mts.	Above	C.	R.	U.	D	
4-5	5-13	2-4	1-2	2-4	4-6	6-9	9-12	12-18	a year.					
6	4	6	5	3	2	...	...	...	...	16	3	...	7	See Summary.
6	7	8	2	...	...	...	...	...	...	14	1	...	8	See Summary.
2	...	...	...	...	...	...	...	...	...	1	1	...	...
2	2	...	1	...	...	...	...	...	...	4	...	...	1	Cerebral hæmorrhage 2; in each hemiplegia; 1 fatal.
18	20	9	6	...	...	...	...	...	...	41	11	...	1	See Summary of Injuries. Complication of other injury 13.
14	15	6	2	...	...	...	...	...	...	35	...	...	2	
1	2	...	...	...	...	...	...	...	...	2	...	...	1	
2	2	1	1	...	...	...	...	...	...	5	...	...	1	
5	...	1	...	...	...	...	...	...	...	1	1	...	4	
3	1	4	3	...	...	...	...	...	...	7	...	...	4	
2	4	2	...	...	...	...	...	...	...	6	2	...	...
...	...	1	...	...	...	...	...	...	...	1	...	...	...	Compound.
...	...	1	1	...	...	...	...	...	...	2	...	...	...	1 also of sup. maxilla, clavicle, and finger; compound.
...	1	...	1	...	...	...	...	...	...	1	1	...	...	1 also of malar, clavicle, and finger; compound.
...	...	...	1	...	...	...	...	...	...	1	...	...	...	Compound comminuted.
3	3	...	...	...	...	...	...	...	...	4	2	...	...	Excision 4, refused operation 1, transferred to ophthalmic ward 1.
1	2	...	...	...	...	...	...	...	...	2	1	...	...	Palate 2, tongue 1.
3	...	4	2	1	...	...	...	...	...	7	...	...	3	Suicidal 8, penetrating air passages 2, and œsophagus 1, lingual artery divided 2.
...	...	2	...	...	...	...	...	...	...	2	...	...	...
1	2	...	...	...	...	...	...	...	...	3	...	...	...
6	7	8	...	...	...	...	...	...	...	12	6	...	3	As a complication of other injury in 3 cases.
1	1	1	...	...	...	...	...	...	...	2	...	...	1	Also of spine and ribs 1, also of ribs 1.

TABLE II.—

INJURIES.	Sex.		Ages.								Duration before admission.							
	M.	F.	Under 5	5-10	-20	-30	-40	-50	-60	Above 60	Under 1 hour.	Hrs. 1-6	Hrs. 7-12	Hrs. 13-24	Dys. 1-3	Dys. 3-6	Above 6 days.	Not re-
LOCAL INJURIES—																		
<i>continued.</i>																		
<i>Injuries of the back—</i>																		
Contusion	5	4	...	1	1	3	1	3	...	...	2	3	...	...	...	2	2	...
Wound	3	...	...	1	1	...	1	...	...	...	...	3	...	...	...	...	...	...
<i>Injuries of the spine—</i>																		
Concussion of	3	1	1	...	1	1	1	...	...	...	...	2	...	...	...	...	2	...
Fracture of	3	...	...	...	1	2	...	...	...	...	...	2	...	...	1	...	...	...
<i>Injuries of the abdomen—</i>																		
Contusion	11	3	1	3	3	4	2	...	...	1	8	4	...	...	2	...	...	...
Foreign body swallowed.	1	1	2	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...
<i>Injuries of the pelvis—</i>																		
Fracture of	12	...	2	...	2	4	1	2	1	...	5	6	...	...	...	1	...	...
Wound of buttock	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...
Wound of perinæum	1	1	...	1	1	...	...	...	...	...	...	1	...	...	1	...	...	...
Contusion of genitals	1	2	...	...	1	1	...	1	...	...	1	2	...	...	...	...	...	...
Wound of "	1	2	1	...	2	...	...	...	...	...	...	3	...	...	...	...	...	...
Rupture of urethra	3	...	...	...	2	1	...	...	...	...	...	...	...	...	3	...	...	...
UPPER EXTREMITY.																		
<i>Contusions</i>																		
Wounds	14	7	2	1	5	6	1	5	...	1	10	10	...	...	1	...	1	...
Wound of artery	3	1	...	...	2	1	1	...	...	...	1	3	...	...	...	...	...	...
<i>Rupture of brachial</i>																		
Plexus	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...
<i>Dislocation of—</i>																		
Humerus	3	...	...	...	...	...	...	2	1	...	1	1	...	...	...	...	1	...
Forearm	1	1	...	...	2	...	...	...	...	...	1	...	...	...	1	...	...	...
Thumb	3	...	...	1	...	1	1	...	...	...	...	2	...	...	...	...	1	...
<i>Fracture of—</i>																		
Clavicle	4	2	1	...	...	1	2	2	...	...	2	4	...	...	...	...	...	...
Scapula	2	...	...	...	1	...	...	...	1	...	...	1	...	...	...	...	1	...
<i>Humerus—</i>																		
Simple	5	1	1	...	3	1	1	...	...	...	2	4	...	...	...	...	...	...
Compound	1	1	...	...	2	...	...	...	...	...	1	1	...	...	...	...	...	...
Comp. comminuted	1	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...
<i>Radius and ulna—</i>																		
Simple	2	...	...	...	1	1	...	...	...	...	2	...	...	...	...	...	...	...
Compound	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...

continued.

Duration of residence.									Result.				Remarks.
Dys. 1-5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Above a year.		C.	R.	U.	D.	
1	1	2	...	...	...	...	...	...	7	2	...	...
1	2	...	...	...	...	...	...	...	1	2	...	...
...	1	1	2	...	...	...	...	...	3	1	...	...
...	...	1	1	...	...	1	...	...	1	1	...	1	Paraplegia 2. Fatal: ? myelitis.
5	4	3	1	1	...	...	...	...	11	2	...	1	
1	1	...	...	...	...	...	...	...	1	1	...	...	Brooch 1, halfpenny 1.
...	2	4	5	1	...	...	...	...	9	1	...	2	Also of humerus 1.
...	...	1	...	...	...	...	...	...	1	...	...	...
...	...	...	...	2	...	...	...	...	2	...	...	...	Also with rupture of urethra 1.
2	...	1	...	...	...	...	...	...	2	1	...	...	Retained testis 1, vulva 2.
1	2	...	...	...	...	...	...	...	3	...	...	...	Scrotum, with protrusion of testis 1.
...	...	1	1	1	...	...	...	...	3	...	...	...
1	...	...	...	...	...	...	...	...	1	...	...	...
7	2	7	4	1	...	...	...	...	13	8	...	...
1	2	1	...	...	...	...	...	...	4	...	...	...
...	...	...	...	1	...	...	...	...	1	...	...	...	Amputation of arm.
1	1	...	1	...	...	...	...	...	3	...	...	...	Subglenoid 1, subcoracoid 2.
1	...	1	...	...	...	...	...	...	2	...	...	...
1	...	1	1	...	...	...	...	...	3	...	...	...	Compound 2, with cellulitis 1.
1	2	3	...	...	...	...	...	...	4	2	...	...	As complication of other injury 2.
...	...	1	1	...	...	...	...	...	2	...	...	...	With fracture of humerus 1, as complication of other injury 3.
1	...	5	...	...	...	...	...	...	3	3	...	...	With fracture of scapula 1, do. radius and ulna 1.
...	...	...	1	1	...	...	...	...	2	...	...	...	Also of pelvis 1.
...	...	...	1	...	...	...	...	...	1	...	...	...
2	...	...	...	...	...	...	...	...	...	2	...	...	As complication of other injury 1.
...	1	...	...	...	...	...	...	...	1	...	...	...

TABLE II.—

[illegible]

continued.

Duration of residence.										Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Above a year.		C.	R.	U.	D.	
...	1	1	...	...	...	...	...	...	2	...	...	...	...	Wound of arm 1, as complication of other injury 7.
...	...	...	...	1	...	...	...	...	1	...	...	...	...	As complication of other injury 2.
...	...	1	1	...	...	...	...	...	1	1	...	...	...	Wound of arm 1.
2	3	5	3	...	...	...	...	...	9	4	...	...	...
...	...	2	1	1	...	...	...	...	4	...	...	...	...
...	1	8	...	...	...	...	...	...	9	...	...	...	...
...	2	5	7	1	...	...	...	...	14	1	...	...	...	Fistula in ano 1, division of tendo Achillis 1.
2	...	...	2	...	...	...	...	...	3	1	...	...	...
6	4	2	1	...	...	...	...	...	10	3	...	...	...
3	3	1	...	1	...	...	...	...	3	4	...	1	...	
2	2	...	...	...	...	...	...	...	3	1	...	...	...
...	...	1	...	...	...	...	...	...	1	...	...	...	...
...	1	...	...	...	...	...	...	...	1	...	...	...	...
...	...	1	...	...	...	...	...	...	1	...	...	...	...	With fracture of neck.
2	2	15	30	7	1	1	...	1	47	11	...	1	...	Pertussis 1, also compound of other leg 1.
...	1	...	1	...	...	...	...	...	1	...	...	1	...	Also transverse of other leg 1.
2	...	...	...	...	...	...	...	...	...	...	...	2	...	
...	1	5	6	...	...	...	...	...	10	1	...	1	...	Also of olecranon 1.
2	24	12	3	3	...	...	...	...	19	25	...	...	...	In 1 fracture of both; 1 with fracture of fibula, other leg.
...	...	1	...	1	...	...	...	...	2	...	...	...	...
...	...	...	1	...	...	...	...	...	1	...	...	...	...
10	22	8	2	...	...	...	...	...	10	32	...	...	...
...	6	3	1	...	...	...	...	...	3	7	...	...	...

TABLE II.—

[illegible]

continued.

Duration of residence.										Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks. 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Above a year.		C.	R.	U.	D.	
7	31	52	10	2	...	...	...	...	46	54	...	2		
...	2	3	3	1	...	...	...	...	6	3	...	...
...	...	2	4	2	...	1	...	...	9	...	...	...		Also compound comminuted of left leg 1.
2	1	...	...	...	...	1	...	...	...	...	...	4		Also compound of right leg 1, both legs 1.
1	4	11	7	1	...	...	...	...	12	10	...	2		Ununited 1; also fracture of femur 1.
...	...	1	1	...	...	...	...	...	2	...	...	...		Compound 1, simple with dislocation 1.
...	1	1	3	1	...	...	...	...	6	...	...	...		Compound comminuted 3.
...	...	1	...	...	...	...	...	...	...	1	...	...		Quadriceps extensor cruris.
...	1	...	...	...	1	...	...	...	2	...	...	...
...	1	1	...	...	...	...	...	...	2	...	...	...		With division of ulnar nerve 1.
1	...	...	...	...	...	...	...	...	...	1	...	...
1	...	...	2	1	...	...	...	...	4	...	...	...
2	1	...	...	...	...	...	...	...	...	3	...	...		As complication of other injury 1.
6	29	12	1	...	...	...	...	...	38	10	...	...		As complication of other injury 3.
1	...	...	1	...	...	...	...	...	1	1	...	...		As complication of other injury 2.
2	5	4	2	...	3	...	...	...	1	13	...	2		Pyloric cancer, empyæma, gout, renal disease, perityphlitis, mental derangement, dyspepsia, sciatica, epilepsy 2, "mad arm" 2, &c.
3	3	...	3	...	...	...	...	...	3	9	1	...		
...	...	...	...	...	...	...	...	...	105	107	14	2		See Ophthalmic Report.
...	...	...	...	...	...	...	...	...	...	...	...	9		
										1471	744	45	168	
										2428				

TABLE III.—

SURGICAL OPERATIONS.	Sex.		Ages.							
	M.	F.	Under 10	5-10	-20	-30	-40	-50	-60	Above 60
REMOVAL OF TUMOURS AND GROWTHS.										
Amputation of breast . . . . .	...	14	...	...	...	1	1	7	2	3
Ditto with removal of glands . . . . .	...	11	...	...	...	...	2	7	...	2
Removal of recurrent growth . . . . .	...	7	...	...	...	...	...	5	1	1
„ glands . . . . .	...	3	...	...	...	...	...	1	1	1
Scirrhus of uterus . . . . .	...	1	...	...	...	...	...	...	1	...
„ tongue	1	...	...	...	...	...	...	1	...	...
For epithelioma of tongue	6	1	...	...	...	...	1	1	3	2
„ mouth	2	...	...	...	...	...	...	...	1	1
„ lip	6	...	...	...	...	...	...	...	...	6
„ head	3	1	...	...	...	...	...	2	1	1
„ extremities	2	...	...	...	...	...	...	1	...	1
„ generative organs . . . . .	...	2	...	...	...	...	2	...	...	...
„ rectum . . . . .	...	2	...	...	...	...	...	1	...	1
„ gland	3	...	...	...	...	...	1	...	2	...
For sarcoma of upper jaw	3	2	2	...	...	...	...	2	...	1
„ lower jaw . . . . .	...	2	...	...	...	...	...	1	1	...
„ parotid region . . . . .	...	2	...	...	...	...	1	...	1	...
„ testis . . . . .	...	...	...	...	...	...	...	...	...	...
„ upper extremity . . . . .	...	1	...	...	1	...	...	...	...	...
„ lower extremity	1	...	...	...	...	1	...	...	...	...
For myxoma	1	...	...	...	...	...	1	...	...	...
For adenoma of breast . . . . .	...	8	...	...	1	5	2	...	...	...
For lipoma	1	7	...	...	2	1	2	2	...	1
For enchondroma	1	2	...	1	...	...	...	...	2	...
For papilloma . . . . .	...	2	...	1	1	...	...	...	...	...
For angioma	1	2	...	1	...	2	...	...	...	...
For exostosis	2	3	...	...	5	...	...	...	...	...
For neuroma	2	1	...	1	1	...	...	1	...	...
For myofibroma . . . . .	...	2	...	...	...	...	1	1	...	...
For nævus vascularis	3	2	3	1	1	...	...	...	...	...
For polypus	3	1	...	...	...	...	...	1	...	...
For rodent ulcer . . . . .	...	1	...	...	...	...	...	1	...	...
For lupus	4	3	...	1	4	2	...	...	...	...
For keloid	2	...	...	...	1	1	...	...	...	...
For lymphadenoma	6	...	5	...	...	1	...	...	...	...
For ovarian disease . . . . .	...	17	...	...	1	4	2	8	1	1
For sebaceous cysts	2	1	...	...	...	2	...	...	1	...
For various cysts	2	...	...	...	1	1	...	...	...	...
NERVOUS SYSTEM.										
Nerve stretching	2	...	...	...	...	...	1	1	...	...

Surgical Operations.

Under 4 days.	Duration of residence after operation.								Result.				Remarks.
	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Above a year.	C.	R.	U.	D.	
...	2	6	5	1	...	...	...	...	13	...	...	1	1 also operation for fistula; sarcoma 3.
...	1	6	3	1	...	...	...	...	9	1	...	1	Sarcoma 1.
...	...	6	...	1	...	...	...	...	7	...	...	...	Also removal of sebaceous cysts 1, encephaloid 1, sarcoma 1.
...	1	2	...	...	...	...	...	...	1	1	...	1	Supra-clavicular 1, axillary followed by hæmorrhage 1, encephaloid 1.
...	...	1	...	...	...	...	...	...	...	1	...	...	Scraping.
...	1	...	...	...	...	...	...	...	...	...	...	1	
...	1	4	1	1	...	...	...	...	4	1	...	2	Scissors 1, galvano-cautery 1, scraping 1, division of cheek 1, of cheek and jaw 2, removal of part of jaw and application of galvano-cautery 1.
...	...	...	2	...	...	...	...	...	1	...	...	1	Erysipelas.
...	3	1	1	1	...	...	...	...	6	...	...	...	Recurrent 1, upper lip 1.
...	2	...	2	...	...	...	...	...	3	1	...	...	Face 3, removal twice one case; scalp 1.
...	...	...	2	...	...	...	...	...	2	...	...	...	Hand 1, os calcis 1.
...	...	1	1	...	...	...	...	...	1	1	...	...	Clitoris 1, cervix uteri 1.
1	...	...	1	...	...	...	...	...	1	...	...	1	
...	...	1	2	...	...	...	...	...	1	2	...	...	Submaxillary; also scraping of growth on tongue 1.
...	1	2	2	...	...	...	...	...	2	3	...	...	Recurrent 1; one recurred and was again removed whilst patient in hospital.
...	2	...	...	...	...	...	...	...	1	...	...	1	Epulis 1. Fatal: erysipelas.
...	1	1	...	...	...	...	...	...	2	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	See Castration.
...	...	1	...	...	...	...	...	...	1	...	...	...	Arm. See also Amputation for Disease.
...	...	1	...	...	...	...	...	...	1	...	...	...	Thigh.
...	...	1	...	...	...	...	...	...	1	...	...	...	Arm.
...	2	4	2	...	...	...	...	...	8	...	...	...
1	3	3	...	1	...	...	...	...	8	...	...	...
...	1	2	...	...	...	...	...	...	3	...	...	...	Hand, paroted, over masseter.
1	...	1	...	...	...	...	...	...	2	...	...	...	Over sacrum, thumb.
...	...	1	2	...	...	...	...	...	3	...	...	...	Back 1, side 1, loin 1.
3	...	2	...	...	...	...	...	...	5	...	...	...	All subungual.
1	...	...	2	...	...	...	...	...	3	...	...	...	After amputation 2, wound 1.
2	...	...	...	...	...	...	...	...	...	...	...	2	Removal of uterus also.
...	2	3	...	...	...	...	...	...	5	...	...	...	Excision 2.
1	1	1	1	...	...	...	...	...	2	2	...	...
...	1	...	...	...	...	...	...	...	...	1	...	...
...	...	1	3	2	...	...	...	...	5	2	...	...	Nose 3, face 2, foot 1; scraping, 1 readmission.
...	...	2	...	...	...	...	...	...	1	1	...	...	Erysipelas 1.
...	1	3	1	...	1	...	...	...	2	4	...	...	One 5 operations.
...	7	2	7	1	...	...	...	...	8	...	...	9	One operation not completed.
...	2	1	...	...	...	...	...	...	3	...	...	...	Also removal of recurrent scirrhus of breast 1.
...	1	1	...	...	...	...	...	...	2	...	...	...
...	...	2	...	...	...	...	...	...	...	2	...	...	Brachial plexus 1, median 1.

TABLE III.—

SURGICAL OPERATIONS.	Sex.		Ages.							
	M.	F.	Under 5	5-10	-20	-30	-40	-50	-60	Above 60
CIRCULATORY SYSTEM.										
Ligature of subclavian artery	1	...	...	...	...	...	...	1	...	...
„ common carotid	1	...	...	...	...	...	1	...	...	...
„ lingual . . . . .	...	1	...	...	...	...	...	1	...	...
„ temporal	2	1	...	...	...	...	...	...	1	2
„ radial	1	...	...	...	...	1	...	...	...	...
„ ulnar . . . . .	...	2	...	...	1	1	...	...	...	...
„ palmar arch . . . . .	...	1	...	1	...	...	...	...	...	...
„ external iliac	1	1	...	...	1	...	...	...	1	...
„ femoral	2	...	...	...	...	1	1	...	...	...
Obliteration of varicose veins	2	1	...	...	...	2	1	...	...	...
Plugging the nares . . . . .	...	1	...	...	...	...	...	1	...	...
RESPIRATORY SYSTEM.										
Tracheotomy	4	2	1	...	...	...	...	2	...	3
For aerial fistula . . . . .	...	1	...	...	...	...	1	...	...	...
GLANDULAR SYSTEM.										
Removal of caseous glands	2	4	...	...	3	3	...	...	...	...
DIGESTIVE SYSTEM.										
Removal of foreign body from pharynx	1	...	...	...	1	...	...	...	...	...
Excision of tonsils	1	...	...	...	1	...	...	...	...	...
Strangulated inguinal hernia	11	...	1	...	...	3	1	5	1	...
„ femoral hernia	2	11	...	...	...	...	...	5	1	...
„ umbilical hernia . . . . .	...	2	...	...	...	...	...	...	2	...
Radical cure of inguinal hernia	2	...	1	1	...	...	...	...	...	...
Abdominal section	3	4	...	...	1	2	1	3	...	...
Artificial anus	1	2	...	...	...	...	1	1	1	...
Gastrostomy	1	...	...	...	...	...	...	...	...	...
Excision of pylorus	1	...	...	...	...	...	...	...	1	...
Imperforate rectum	2	...	2	...	...	...	...	...	...	...
Division of fistula in ano	14	6	...	...	1	7	6	4	1	...
Removal of hæmorrhoids	4	3	...	...	...	1	4	1	...	...
Fissure of anus	2	2	...	...	1	1	1	1	...	...
Division of stricture of rectum	1	1	...	...	...	1	1	...	...	...
GENITO-URINARY SYSTEM.										
For phimosis	11	...	...	...	4	6	...	...	1	...
For paraphimosis	1	...	...	...	1	...	...	...	...	...

continued.

Duration of residence after operation.										Result.				Remarks.
Cases #	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Above a year.		C.	R.	U.	D.	
...	...	...	1	...	...	...	...	...	...	1	...	...	...	Right.
...	1	...	...	...	...	...	...	...	...	...	...	...	1	Right.
...	...	1	...	...	...	...	...	...	...	1	...	...	...	Wound.
1	...	2	...	...	...	...	...	...	...	2	...	...	1	Traumatic aneurism 1, wound 2.
...	1	...	...	...	...	...	...	...	...	1	...	...	...	Wound.
...	1	1	...	...	...	...	...	...	...	2	...	...	...	Secondary hæmorrhage from wound 2.
...	1	...	...	...	...	...	...	...	...	1	...	...	...	Traumatic aneurism, superficial.
...	...	1	1	...	...	...	...	...	...	...	1	1	1	1 also amputation of thigh, fatal; both right side.
...	...	1	...	1	...	...	...	...	...	1	1	...	...	Hæmorrhage after amputation of thigh 13th day 1, 2nd day 1.
...	...	2	1	...	...	...	...	...	...	3	...	...	...	Excision 2, ligature 1.
...	...	1	...	...	...	...	...	...	...	1	...	...	...
4	...	1	...	1	...	...	...	...	...	1	...	...	5	Malignant disease 4, wound of neck 1.
...	...	1	...	...	...	...	...	...	...	1	...	...	...	5 years after tracheotomy.
...	1	4	1	...	...	...	...	...	...	6	...	...	...
...	...	1	...	...	...	...	...	...	...	1	...	...	...	Pin.
...	...	...	1	...	...	...	...	...	...	...	1	...	...	Before removal of foreign body.
2	1	6	1	1	...	...	...	...	...	7	...	...	4	With removal of whole or part of sac 4, extra-peritoneal 4.
...	2	4	3	1	...	...	...	...	...	6	...	...	7	Incomplete 1, extraperitoneal 1.
...	...	...	1	...	...	...	...	...	...	1	...	...	1	Shock.
...	...	...	1	1	...	...	...	...	...	2	...	...	...
...	...	1	...	...	...	...	...	...	...	...	...	...	7	Exploratory 2, strangulation 2, exploratory after hernia 1.
...	1	1	1	...	...	...	...	...	...	1	...	...	2	Colotomy 2.
...	...	...	...	...	...	...	...	...	...	...	...	...	1	Also tracheotomy.
...	...	...	...	...	...	...	...	...	...	...	...	...	1	
...	6	8	6	...	...	...	...	...	...	18	1	...	1	Fatal: hæmophilia.
...	3	4	...	...	...	...	...	...	...	6	1	...	...	Clamp and cantery 6, ligature 1.
...	3	1	...	...	...	...	...	...	...	4	...	...	...
...	...	2	...	...	...	...	...	...	...	2	...	...	...
...	
4	5	2	...	...	...	...	...	...	...	10	1	...	...	See Warts.
...	...	...	...	...	...	...	...	...	...	1	...	...	...

TABLE III.—

SURGICAL OPERATIONS.	Sex.		Ages.								
	M.	F.	Under 15	5-10	-20	-30	-40	-50	-60	Above 60	
CIRCULATORY SYSTEM—continued.											
For hydrocele	5	...	...	...	...	...	3	...	...	2
For varicocele	5	...	...	...	...	5	...	...	...	...
For ruptured perinæum . . . . .	...	3	...	2	...	1	...	...	...	...
For removal of warts	3	18	...	...	12	9	...	...	...	...
For perineal fistula	1	...	...	...	...	1	...	...	...	...
Internal urethrotomy	7	...	...	...	...	1	5	1	...	...
Perineal section	17	...	1	1	1	...	4	6	3	1	
„ puncture	4	...	...	...	...	...	2	2	...	...
Calculus of bladder	2	...	1	1	...	...	...	...	...	...
„ kidney	1	...	...	...	...	1	...	...	...	...
Hypertrophy of labia . . . . .	...	1	...	...	...	1	...	...	...	...
Castration	2	...	1	...	...	...	1	...	...	...
Oophorectomy . . . . .	...	1	...	...	...	...	1	...	...	...
LOCOMOTORY SYSTEM.											
Subcutaneous division of femur	10	3	2	5	5	1	...	...	...	...
„ „ tibia	4	4	4	3	1	...	...	...	...	...
Trephining	8	...	1	...	3	2	1	...	...	...
Elevation in depressed fracture	1	...	1	...	...	...	...	...	...	...
For ununited fracture	3	...	...	...	...	1	...	2	...	...
Removal of bone in compound fracture	5	...	...	...	1	2	...	2	...	...
Removal of necrosed bone from—											
Inferior maxilla	3	1	1	...	...	2	...	1	...	...
Sternum and ribs	2	...	...	...	1	...	1	...	...	...
Upper extremity	5	...	...	...	3	...	2	...	...	...
Femur	5	...	1	2	1	...	...	...	1	...
Tibia	12	4	3	6	4	...	1	1	...	...
Foot	2	3	1	...	2	1	...	...	1	...
Hand	1	1	...	...	1	...	...	1	...	...
Ilium	2	...	...	1	1	...	...	...	...	...
Caries of—											
Humerus	1	...	...	...	...	...	...	...	1	...
Pelvis	1	...	...	...	...	1	...	...	...	...
Femur	2	...	...	...	1	1	...	...	...	...
Os calcis	1	1	...	...	...	1	1	...	...	...
Other bones of foot	2	1	...	...	2	1	...	...	...	...
Excision of—											
Shoulder	3	...	...	1	1	...	...	1	...	...
Elbow	4	1	2	1	2	...	...	...	...	...
Hip	9	4	5	2	5	1	...	...	...	...
Knee	4	2	...	1	2	2	...	1	...	...
Ankle . . . . .	...	2	...	1	1	...	...	...	...	...

continued.

Duration of residence after operation.									Result.				Remarks.
4 days.	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Above a year.	C.	R.	U.	D.	
2	2	...	...	1	...	...	...	...	5	...	...	...	With injection of iodine 3; 1 admitted for stricture.
...	...	5	...	...	...	...	...	...	4	1	...	...
...	...	1	1	1	...	...	...	...	2	1	...	...
...	3	7	9	2	...	...	...	...	14	7	...	...
...	...	...	...	1	...	...	...	...	...	1	...	...
...	5	...	...	2	...	...	...	...	7	...	...	...	Also perineal puncture 1.
3	2	2	3	6	1	...	...	...	10	1	...	6	Also perineal puncture 2, internal urethrotomy 2, extravasation 4.
...	...	1	2	1	...	...	...	...	1	2	...	1	Also perineal section 2.
...	...	1	...	1	...	...	...	...	2	...	...	...
1	...	...	...	...	...	...	...	...	...	...	...	1	Nephrectomy.
...	...	1	...	...	...	...	...	...	...	...	...	1	Syphilitic.
...	...	1	1	...	...	...	...	...	1	1	...	...	Sarcoma.
1	...	...	...	...	...	...	...	...	...	...	1	...	Also removal of uterus for myofibroma; fatal.
...	...	...	7	6	...	...	...	...	12	1	...	...	Also of tibia 1.
...	...	2	2	2	2	...	...	...	8	...	...	...	Also of femur 1, followed by necrosis 1.
3	...	2	2	1	...	...	...	...	2	2	1	3	Tibia 3, os calcis 1, mastoid cells 1, skull 3.
...	...	...	...	...	...	...	...	...	...	...	...	1	
1	1	...	...	1	...	...	1	...	1	...	2	...	Femur 1, patella 1, tibia 1.
1	...	3	...	1	...	...	...	...	3	2	...	...	Afterwards amputation 2.
...	2	1	1	...	...	...	...	...	3	1	...	...
1	1	...	...	...	...	...	...	...	1	1	...	...	Rib 1, sternum 1.
3	1	...	...	1	...	...	...	...	4	1	...	...	Humerus 4, ulna 1.
...	1	3	...	...	1	...	...	...	5	...	...	...	Also of tibia 1, after amputation 1.
1	1	...	5	7	2	...	...	...	13	3	...	...	Also of femur 1, after osteotomy 1.
...	...	4	1	...	...	...	...	...	4	1	...	...	Os calcis 1, metatarsals 3.
...	...	2	...	...	...	...	...	...	1	...	1	...	
1	1	...	...	...	...	...	...	...	1	1	...	...
...	...	1	...	...	...	...	...	...	1	...	...	...
...	...	...	...	1	...	...	...	...	1	1	...	...	After amputation 1, associated with fracture 1.
...	...	1	1	...	...	...	...	...	1	1	...	...
...	...	...	3	...	...	...	...	...	...	3	...	...
...	...	3	...	...	...	...	...	...	3	...	...	...	Primary excision 1.
...	...	...	3	...	2	...	...	...	5	...	...	...	After wound 1.
...	...	3	4	4	2	...	...	...	11	2	...	...
...	...	...	2	2	1	1	...	...	5	1	...	...	Afterwards amputation 1, erysipelas 1.
...	...	...	...	1	1	...	...	...	2	...	...	...

[illegible]

continued.

[illegible]

TABLE III.—

SURGICAL OPERATIONS.	Sex.		Ages.							
	M.	F.	Under 5	5-10	-20	-30	-40	-50	-60	Above 60
REPARATIVE OPERATIONS—continued.										
For reunion of nerve . . . . .	...	...	...	...	...	...	...	...	...	...
Plastic	6	1	1	...	...	2	4	...	...	...
Tenotomy for club-foot	9	6	6	2	2	5	...	...	...	...
" torticollis	1	...	...	1	...	...	...	...	...	...
" deformity	5	2	...	1	1	2	...	2	...	1
MISCELLANEOUS.										
For conical stump	2	...	...	...	2	...	...	...	...	...
For painful cicatrix . . . . .	...	1	...	...	1	...	...	...	...	...
Extirpation of eyeball	3	2	1	...	1	1	...	2	...	...
Enlarged bursa	2	4	...	...	...	3	3	...	...	...
Removal of foreign bodies	1	1	1	...	1	...	...	...	...	...
Paracentesis of ovarian cyst . . . . .	...	2	...	...	...	2	...	...	...	...
" thoracis	2	...	...	...	2	...	...	...	...	...
Incision for abdominal abscess . . . . .	...	2	...	2	...	...	...	...	...	...
For hammer-toe	1	...	...	...	1	...	...	...	...	...
For deformity of ankle	1	...	...	1	...	...	...	...	...	...
Total	403	255								
	658									

continued.

Duration of residence after operation.									Result.				Remarks.
Under 4 days.	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Above a year.	C.	R.	U.	D.	
...	...	...	...	...	...	...	...	...	...	...	...	...	See Neuroma.
...	1	...	1	3	2	...	...	...	1	6	...	...	Extroversion 5, of external genitals 1, foot 1.
...	5	5	4	1	...	...	...	...	9	6	...	...
...	...	...	...	1	...	...	...	...	1	...	...	...
...	...	2	3	1	...	1	...	...	5	2	...	...	Of toes 1, hand 1, hamstrings during excision of knee 1.
...	...	1	...	1	...	...	...	...	2	...	...	...	Arm 1, thigh 1.
...	...	1	...	...	...	...	...	...	1	...	...	...	Also injury to nerve.
1	3	1	...	...	...	...	...	...	5	...	...	...	Burn 1, wound 4.
...	2	3	1	...	...	...	...	...	6	...	...	...
...	1	1	1	...	...	...	...	...	2	...	...	...	Bullet 1, needle 1.
...	1	...	...	1	...	...	...	...	1	1	1	...	
...	1	...	...	...	...	1	...	...	1	1	...	...	Erysipelas.
...	...	1	...	1	...	...	...	...	2	...	...	...
...	...	1	...	...	...	...	...	...	1	...	...	...	Excision of joint.
...	...	...	1	...	...	...	...	...	1	...	...	...	After excision of joint.
									477	96	9	76	
									658				

SUMMARY OF DISEASES.

GENERAL DISEASES.

Erysipelas (arising).—Males 27, females 12. C. 28, R. 3, D. 8. See Special Table III. The fatal cases were—1 admitted for cellulo-cutaneous erysipelas, 1 gangrenous stomatitis (this patient died from pyæmia), 1 after operation for epithelioma, 1 after operation for sarcoma of jaw, 1 after cellulitis, 1 after strangulated hernia, 1 necrosis of rib, 1 gluteal abscess. The season of the year does not appear to have had much influence upon the attacks; for instance, in August, although 10 cases were admitted with the disease, no case occurred in the wards of the hospital. In May no case was admitted, whilst 3 occurred in the wards. In October 4 cases admitted, 10 attacks are recorded in the wards.

Erysipelas (admitted as such).—42. C. 39, R. 1, D. 2. Of these 4 cellulo-cutaneous. The eruption was general in 1, affecting the neck only 2, head 14, arm 6, leg 17, legs 2. *Causes*.—Contused wound 17, incised wound 1; splint sore 1, sore from pressure of boot 2; rat bite 1; carbuncle 3; ulcers of leg 6; chronic eczema 1; sinuses 2; cold 3; cause doubtful 3.

Fatal cases.—Æt. 40. Face and head, ascribed to cold; ill 7 days before admission; delirium and temperature 105°. Lived 2 days. No P.M.

Æt. 40. Cellulo-cutaneous of left leg, small ulcers preceding appearance of eruption, which commenced 3 weeks before admission, and had produced very extensive slough. Second attack of erysipelas in the hospital. Amputation of leg; suppuration in knee; amputation of thigh, followed by secondary hæmorrhage, for which femoral vessels ligatured in stump; septicæmia.

Pyæmia.—(See Special Table II.—Pyæmia.)

Syphilis.—Males 4, females 95.

1. *Primary by*—

a. Indurated chancre.—Males 2, females 5. With phimosi 2; primary of lip 2; eruption 2. Complications: gonorrhœa 2; soft sores 1; bubo 1; scabies 1.

2. *Secondary*.—83. Males 1, females 82. C. 72, R. 11. Manifested by the following symptoms—Condylomata 32; congestion of fauces and tonsils 11; ulceration of tonsils 27, of fauces 6, of palate 6, of mouth 3; sores about genitals 22. Eruptions: roseola 2; squamous 15; pemphigus 3; eczema 3; lichen 2; herpes 1; rupia 4. Iritis 2; ulcer of cornea 1; neuro-retinitis 1;

loss of hair 9; hypertrophy of labia 5; onychia 1. *Complications*.—Vaginal discharge 48; warts 6; bubo 5; œdema of labia 8; hæmorrhoids 1; fissure of anus 2; pregnancy 3 (1 miscarried between 3 and 4 months); acute tonsillitis 1; laryngitis 1; congestion of lungs 1; simple ulcer of stomach 1; typhoid fever 1.

3. *Tertiary*.—6. Males 1, females 5. C. 4, R. 2. Males, marks of old eruption, periosteal nodes, breaking down and requiring incision. Females, ulcerations: deep of surface of body 3; perforating palate 2.

4. *Congenital*.—Females 3. R. 3. 2 admitted with soft sores. 1, æt. 20, extensive ulceration of legs, weakness of left side of body from an attack of hemiplegia, and numerous marks of the hereditary disease; 2 were also admitted into the general hospital.

LOCAL DISEASES.

TUMOURS.

Carcinomata—

Multiple.—Female, æt. 48. Secondary to scirrhus of breast removed 4 years before; recurrence in cicatrix, the other breast, throughout the skeleton, in the skin, and also in the liver.

Abdomen.—Male, æt. 19. About 6 weeks before noticed pain in abdomen. When admitted there was a dense firm growth involving umbilicus and skin around, extending deeply; gradual increase, but some relief from treatment; left hospital, but was readmitted on medical side, where he died.

Breast.—C. 18, R. 3, U. 1, D. 2. Breast only affected in 11; amputation performed in each case; 1, æt. 66, died from exhaustion. In the remaining 13 there was glandular enlargement; in 10 the disease was removed; in the others it was too extensive for operation; 1, æt. 65, died after operation from pericarditis and commencing granular kidneys. In 14 cases no cause could be discovered; 4 ascribed to injury, 2 suckling, 1 drawing nipples, 2 abscess of breast; a sister said to have cancer in two cases, and in 1 grandmother had one. In 13 the right breast affected.

Breast (recurrent).—Recurred in or near cicatrix. Period between operation and recurrence of growth: æt. 46, 4 years; æt. 52, 4 years; æt. 44, 8 months; æt. 44, 1 month; readmission, 3 months.

Glands.—2. Æt. 67; supra-clavicular; noticed 3 months; a scirrhus tumour removed with breast 9 months previously. Æt. 45; axillary; the vein probably wounded during operation; secondary hæmorrhage on the 5th day; fatal.

Rectum.—Female, æt. 60; duration 6 months. Male, æt. 42; duration 4 months; readmitted; relieved by Supposit. Bellad.

Uterus.—Æt. 53; duration 6 months; treated by erosion and application of perchloride of iron; refused further operation.

Encephaloid—

Breast.—2. Duration 6 to 7 months; recurred in glands, which were removed on readmission.

Glands.—1. Recurrence in glands noticed for 3 months; the breast removed 12 months ago, and a recurrent tumour of cicatrix 2 months later.

Epithelioma.—*a. Tongue.*—Males 10, females 1. C. 4, R. 2, U. 2, D. 3. Involving tongue only 4, removed by operation; 2 cured, 2 died. Involving glands as well as tongue 3; 2 operations, 1 cured, 1 died; 1 refused operation. In 1 the disease involved tongue, floor of mouth, and gland under the jaw; the gland was excised and the growth scraped; recovered. In 3 the lower jaw was also involved; in 1 case (recurrent) it was successfully removed; in the other cases no operation was advisable.

b. Mouth.—Males 3, female 1. In each affecting superior maxilla; in 1 the cheek was also involved.

c. Lip.—Males 6. In each case removed by operation; 1 growth on upper lip; 3 above 70 years of age.

d. Glands.—Males 3. In each a submaxillary gland affected, secondary to epithelioma of lower lip; 1 recurrence in the same patient after removal of the gland.

e. Head.—Males 2, females 1. 2 face; 1 after lupus, the other without known cause; 1 scalp, probably in site of a congenital nævus.

f. Extremities.—Males 2. 1 recurrent in hand after it had been removed twice; the other a primary growth over the os calcis; in each glandular enlargement.

g. Generative organs.—Females 3. In 1 cervix removed for growth, and then abdomen explored with view of removing uterus, but glands extensively involved, and operation not continued. In the second case the part accessible was scraped, and then chloride of zinc applied. In the third the clitoris was affected, and that organ was removed.

h. Digestive tract.—Males 1. Epithelial growth of left tonsil extending into the larynx; gastrostomy and tracheotomy performed. Females 4. 2 of œsophagus; 1 kept alive for more than 4 months by means of a tube passed through stricture and retained, the other refused treatment. 2 of rectum; in each removal; 1 extensive, patient died from shock.

Sarcomata—

Upper jaw.—Males 4, females 3. C. 2, R. 4, U. 1. Male, æt. 65, 10 weeks; alveolar process left side, rapid growth; general condition bad; readmitted; rapid extension of mischief, marked cachexia; relieved. Æt. 66; small round-celled growth affecting right alveolus, 2 months, part affected removed after incision of cheek; where cheek affected disease was scraped; cured. Æt. 3; 2 months' growth, affecting periosteum of the right upper maxilla; removal followed by recurrence; a second operation also followed by recurrence of growth. Female, æt. 72, 3 months; right nostril affected, growth projecting behind soft palate; unrelieved. Æt. 41; a tumour removed when aged 15; from situation of present growth, which in existence 6 months; bulging walls of antrum extending towards orbit, whole bone removed; not much new growth; cured.

Æt. 44; recurrent growth removed from palate last year, now affecting right half of palate and alveolus, removed; formerly spindle-celled, now round and spindle-celled, chiefly former.

Nostril.—*Æt.* 50; relieved. 4 years ago polypus removed from nostril; 18 months' later present growth appeared, filling up the nostril and causing deafness on left side; occasional hæmorrhage.

Lower jaw.—*Æt.* 47; epulis 2 years, probably myeloid; cured. *Æt.* 54; 3 years' growth, right side of lower jaw, alveolus and angle; removal followed by sloughing of flaps and erysipelas; died.

Upper extremity.—Male, *æt.* 34; growth resembling bursa under left deltoid, 3 months; tapped; relieved. Re-admitted; removal; myxo-sarcoma, chiefly myxoma; cured. Male, *æt.* 38; admitted in 1881 for spontaneous fracture of humerus, new growth, removed by amputation at shoulder joint; small round-celled growth; cured. *Æt.* 14; small round-celled growth removed from right upper arm, where it had caused pain for 3 years; cured.

Lower extremity.—Female, *æt.* 45; recurrent growth for 8 months, had had several removals of disease; unrelieved. Male, *æt.* 22; spindle-celled growth front of thigh, 9 months; removed; cured.

Breast.—C. 5. *Æt.* 58, 3 months; removal followed by erysipelas. *Æt.* 61, 8 months; *æt.* 50, 5 years; *æt.* 44, 12 months, in this case there were several of the characters of scirrhus, but microscopically the growth sarcomatous, and there have been rapid recurrences after removals since. *Æt.* 47; extensive recurrent growth over left pectoral region, 3 months, involving axilla and muscle; removed; mixed growth; cells round, oval, and spindle; patches of extravasated blood in the growth; erysipelas; cured.

Testis.—*Æt.* 3; relieved; 9 months' growth, round celled, recurred in lumbar glands, removed by parents. *Æt.* 33, 10 weeks, following injury; cured. In each case castration performed.

Parotid region.—C. 2. Female, *æt.* 39, 2 years; small round-celled growth removed. Female, *æt.* 60; recurrent melanotic growth, parotid region, involving skin only; removed.

Cystic of—

Ovary.—C. 8, R. 4, D. 9. In 17 ovariectomy was performed with antiseptic precautions.

Cured.

CASE 1.—*Æt.* 30, married, no child. Attention drawn to swelling in lower abdomen 6 months before by pain, which continued more or less until a fortnight ago; menstruation every fortnight since swelling noticed. Girth 35½ inches. Tumour multilocular, uterine and intestine adherent, firm adhesions. Much flatulence and occasional vomiting for four or five days. Temperature normal after sixth day, with exception of 101° on 16th day, when there was slight abdominal pain and vomiting lasting about 24 hours. Discharged 41 days after operation.

CASE 2.—*Æt.* 47, married, 3 children. Menstrual flow ceased 2 years ago,

she then noticed swelling above the left groin, slight pain at times. Had been tapped twice. Girth $41\frac{1}{2}$ inches. 15 pints of fluid free in abdominal cavity. A multilocular cyst removed from right ovary, bound down by pelvic adhesions, and a much smaller one from the left, to which only slight adhesions. Temperature 100.1° evening of day following operation, afterwards, with one exception, normal. Discharged 36 days after operation.

CASE 3.—Æt. 47, single. Enlargement of abdomen with occasional sharp pain about umbilicus for 5 years. Girth $31\frac{1}{2}$ inches. Tumour chiefly consisted of one large cyst connected with left ovary; some solid matter. The temperature 102.2° evening of day following operation, after 3rd day normal, excepting once when it rose to 100° (administration of enema). Discharged 38 days after operation.

CASE 4.—Æt. 19, single. Gradual enlargement of abdomen for 9 months, quite painless until a month ago, when she had pain which lasted for 16 days in the left side of the abdomen. Girth $36\frac{1}{2}$ inches. Multilocular cyst removed connected with the left ovary; no adhesions. Recovery retarded by suppuration along line of incision. Discharged 46 days after operation.

CASE 5.—Æt. 52, widow, 4 children. Noticed swelling in the median line of lower abdomen, 3 years, directly after cessation of catamenia. Tapped once, 2 years ago; tumour disappeared for a time. Until the last month she had no pain, since then has had much pain in the lower abdomen and incontinence of urine. Multilocular tumour mostly solid, numerous and firm adhesions; left ovary (?). Discharged 44 days after operation.

CASE 6.—Æt. 37, married, 7 children, 1 miscarriage. 12 months ago an attack of severe general pain in the abdomen and constipation. Noticed unusual enlargement during last pregnancy which terminated 6 weeks since; has had several attacks of cramping pain. Girth 35 inches. Some free ascitic fluid; multilocular cyst; a few slight and one firm adhesion. Long pedicle connected with right ovary. 8 days after operation she suffered from phlebitis of left saphena vein, but was discharged 30 days after operation.

CASE 7.—Æt. 29, married, 3 children. Shortly after last confinement, 8 months ago, noticed swelling on left side of lower abdomen, painless increase. Girth $39\frac{1}{2}$ inches. Single cyst connected with left ovary, containing $19\frac{1}{2}$ pints of fluid; no adhesions. Slight rise of temperature for first 3 days. Discharged 26 days after operation.

CASE 8.—Æt. 65, married. 7 months ago noticed swelling in left lower abdomen; she had "an attack of spasm" in that part 2 years since, but did not notice anything wrong; since appearance of swelling has had sharp pain in it, but never accompanied by vomiting. Girth 31 inches. Small amount of free ascitic fluid; multilocular tumour left ovary. Slight rise of temperature for 24 hours after operation. Discharged 39 days after operation.

Relieved.

CASE 1.—Æt. 29, married, 3 children. Enlargement of abdomen noticed for 3 weeks, attention drawn to it by severe pain. There was apparently a single central cyst. Patient refused operation.

CASE 2.—Æt. 56, married, no children, no miscarriages. Pain over sacrum for 12 months with occasional hæmorrhage from the bowels. Apparently a solid tumour to left of median line in pelvic region, size of foetal head. Attack of pneumonia whilst in ward; no operation advised.

CASE 3.—Æt. 44, single. Admitted with tumour of cystic character in lower abdomen, and with the history of a tapping some 3 months before. Was in the hospital 26 days.

CASE 4.—Æt. 22, single. Admitted with parametric exudation. On examination a small cyst was discovered on right side of pelvis which when tapped yielded ovarian fluid.

Died.

CASE 1.—Æt. 29, single. Tumour growing 18 months; cyst aspirated, operation 3 days later; peritoneal cavity filled with fluid which had escaped from the unclosed opening made by needle of aspirator; unilocular cyst. Died 4 days later; hæmorrhage from pedicle.

CASE 2.—Æt. 30, single. Tumour of 2 years' duration. Girth 51½ inches. 15 gallons of fluid in peritoneal cavity, and a craggy multilocular tumour situated in the pelvis, too adherent for removal to be attempted. Died 2 days; peritonitis.

CASE 3.—Æt. 45, married, 5 children. 8 months ago a swelling in lower abdomen found after an attack of severe pain accompanied by vomiting. Girth 37 inches. Multilocular cyst, fair amount of solid matter; some firm adhesions. Died 3 days after operation; peritonitis.

CASE 4.—Æt. 31, single. 4 months' gradual and painless enlargement of abdomen. Girth 28½ inches. A recent rupture in wall of a cyst with a larger quantity of muddy fluid in peritoneal cavity; multilocular cyst. Died 5 days after operation, with a temperature of 104.4°, and symptoms of acute mania.

CASE 5.—Æt. 45, single. Tumour noticed when of a large size 7 months ago. Girth 29½ inches. Much thin fluid in peritoneal cavity; unilocular cyst with a rent in its posterior wall. Died 4 days after operation with a temperature of 106°; peritonitis.

CASE 6.—Æt. 44, married, 1 child, 5 miscarriages. Enlargement of abdomen noticed for 4 months. Girth 41½ inches. Multilocular cyst, many adhesions, whole of cyst wall not removed; drainage-tube passed through posterior vaginal wall. Died 7 days after operation; peritonitis.

CASE 7.—Æt. 50, married, 3 children. Tumour of abdomen noticed 4 months, which had been tapped three times; pus issuing from an opening in the mid line of abdomen, nearly 4 pints released by first incision; unilocular cyst with some anterior adhesions. Died on the following day; peritonitis.

CASE 8.—Æt. 44, single. 4 months ago sudden swelling of lower extremities, a few weeks later tumour discovered in lower abdomen, much pain in it at times. Girth 33½ inches. Tumour consisted of a largish cyst and a good deal of semi-solid matter, and connected with the left ovary; few adhesions. Died 6 days after operation; peritonitis.

CASE 9.—Æt. 27, married, 6 children. A small tumour noticed 2 years ago, increase of late very rapid. Girth $34\frac{1}{4}$ inches. Large dermoid cyst connected with left ovary; some of its contents escaped into peritoneal cavity. Died 2 days after operation; peritonitis.

Myofibroma of Uterus.—R. 5, D. 3.

Relieved 5.

1. Æt. 44, married. Tumour noticed for 3 years; ergot given; in hospital 61 days.

2. Æt. 43. Tumour noticed 1 year and 10 months; several attacks of pain in it, accompanied by vomiting; catamenia irregular; in hospital 16 days.

3. Readmission of No. 2; catamenia absent for 2 months; tumour decidedly smaller; in hospital 8 days.

4. Æt. 41, single. Catamenia profuse for 6 years; tumour noticed for 2 years, apparently occupying posterior wall of uterus; in hospital 141 days, during that time had a slight attack of bronchitis.

5. Æt. 31, single. Tumour first noticed 10 months ago; a hard, rounded, solid mass to left of uterus; in hospital 17 days.

Fatal 3.

1. Æt. 37, single. Anæmic woman; had suffered from attacks of uterine hæmorrhage and tumour for 12 months; oophorectomy performed, followed by almost complete suppression of urine; 2 days later the tumour and uterus removed because of it. Patient died from shock of the operation on the following day.

2. Æt. 44, single. Noticed a lump in lower abdomen 2 years before admission. Abdominal incision made with view to removal of tumour, but its connections to pelvic organs were found to be too close. Died 3 days later, apparently from shock; no peritonitis.

3. Æt. 47, married, no children. Difficulty in passing a motion for 18 months, and for shorter time she had noticed a tumour in lower abdomen. Large solid tumour separated from adhesions and removed with uterus. Died next day from collapse.

NERVOUS SYSTEM.

Tetanus (admitted as such).—D. Female, æt. 32, married. Had had an ulcerated leg for 2 years. 6 days before admission complained of pain in the neck and tongue, with a difficulty in deglutition; 3 days later unable to open her mouth, and the day after that first suffered from spasm. A syphilitic ulcer over inner side of the left leg; no spasm at first, but muscles, especially the recti of abdomen, were rigid; later in the day there was slight occasional spasm of the body, but not strong or long continued; the spasms, however, soon increased in severity, but were at no time very violent. Temperature varied from $99\cdot4^{\circ}$ to $104\cdot8^{\circ}$; pulse 88 to 160; resp. 26 to 56. *Treatment.*—Nutrient

enemata, amyl nitrite, chloroform inhalation. P.M.—The kidneys were small and granular; the grey matter of the cord everywhere appeared much redder than in health; other organs healthy.

CIRCULATORY SYSTEM.

Aneurism—

Innominate.—2 D. Æt. 60. For 9 weeks loss of voice, proved on admission to be due to paralysis of right posterior crico-arytenoid muscle, the vocal cord being immovable. No physical sign of innominate aneurism on examination of chest. Died suddenly on 19th day. P.M.—Aneurism springing from posterior part of artery; the size of a walnut ruptured into œsophagus and trachea; the right recurrent laryngeal nerve was involved in the walls.

Æt. 37. Symptoms 3 months. Aneurism at the root of the neck on right side, over carotid, rapidly increasing. Ligature of common carotid, followed by bronchitis. P.M.—Aneurism of innominate artery, producing erosion of inner one third posterior surface of right clavicle; pressure on trachea rings having pushed their way into the œsophagus. In each case a history of syphilis was obtained.

Popliteal.—2 C. Æt. 35. Large popliteal aneurism of right leg treated by digital compression of the femoral. Returned for advice some months later for aneurism of abdominal aorta.

Æt. 30. Left popliteal aneurism of 10 weeks' duration. Cured by Esmarch's bandage followed by digital pressure.

Ileofemoral.—Male 1, female 1. D. 2. Male, æt. 57. The left external iliac artery ligatured for ileofemoral aneurism last year; small aneurism on right side then noticed, but patient refused treatment; now large, extending above Poupart's ligament; external iliac ligatured; sloughing of skin near wound and over tumour, followed by 3 rigors and death a month after operation. P.M.—The small remains of aneurism on left side filled by firm yellow clot; that on the right side firm, but still large; granular kidneys; pericarditis with effusion; emphysema of lungs.

Female, æt. 20. Aneurism of right groin, coming on after confinement in a weakly girl suffering from mitral disease, and accompanied by gangrene of the foot and albuminuria. Amputation of the thigh and ligature of the external iliac performed. Died from exhaustion 15 days after the operation.

Axillary.—Male, æt. 49. Strain of arm 7 years before, followed by appearance of a swelling in armpit the size of a walnut. One month before admission again strained the arm, and since there has been a rapid increase in size of the swelling. Strong history of syphilis. Large aneurism extending down by the side of the thorax. Left hospital 48 days after ligature of third part of subclavian; cured.

Traumatic cases (temporal).—C. Male, æt. 74. Appearing immediately after a fall on the forehead. Cured by incision and ligature of ends of artery.

C. Female, æt. 10. Superficial palmar arch following a cut in the palm of left hand. Cured by incision and ligature of wounded vessel above and below opening.

DIGESTIVE SYSTEM.

Hernia.—(See Special Table I—Hernia.)

Fistula in ano.—Males 17, females 6. C. 17, R. 5, D. 1. In 2 history of a previous fistula, 6 family history of phthisis or liability to fatal chest mischief, 3 symptoms of phthisis, 3 family history not stated, in the remainder good. *Complications.*—Scirrhus of breast 1; stricture of rectum 1; ulcer of rectum 1; ague 1; erysipelas 1; operation in 18, 1 died from hæmorrhage due to hæmophilia, 1 also admitted for lacerated wound of leg.

Obstruction of the bowels.—Males 4, females 4. C. 1, D. 7.

C. Female, æt. 36. Umbilical hernia for 5 years, for some time irreducible. Pregnant 7 months; symptoms of strangulation 4 days, cause doubtful, evidently not due to hernia. Treatment, opiates; symptoms relieved; some diarrhœa 4 days after admission.

Died.

Males, æt. 66. Constipation 5; vomiting 4 days with pain in left side of abdomen. Apparently 3 herniæ, umbilical; left scrotal, right femoral; no evidence of strangulation in them. The scrotal hernia was down but went back easily when touched; there was dulness to the left of umbilicus; vomiting now stercoraceous, great collapse, and patient died before any operation could be performed. P.M.—No cause for symptoms discovered, no evidence of obstruction, internal organs healthy. A serous cyst depending from under surface of umbilicus had simulated hernia.

Æt. 26. Vomiting with severe abdominal pain 9 days, constipation 4 days. History of a discharge from umbilicus, which commenced when he was 3 weeks old and continued until the age of 7 years. Abdominal section performed, and a band divided, this caused obstruction of the small intestine. Patient lived 2 days. P.M.—Recent peritonitis, a diverticulum arising from the small intestine 27 inches above the ileo-cæcal valve.

Æt. 47. History of left inguinal hernia, symptoms of acute obstruction 3 days; admitted in a state of collapse, only living 4 hours after he came in. P.M.—Volvulus of small intestine; peritonitis.

Æt. 16. Day of admission acute pain in abdomen; straining, with prolapse of rectum, and vomiting. Symptoms pointed to intussusception, and 4 days before death abdominal section was performed but without revealing any cause, beyond dilatation of large intestine. No post mortem.

Females, æt. 43. Ovariectomy 4 years before; 5 weeks' frequent attacks of abdominal pain, 4 days' constipation and increased symptoms of obstruction, relieved after admission but recurring with greater severity 7 days later. Abdominal section with formation of artificial anus in median line performed; death from exhaustion 22 days afterwards. P.M.—Lower part of small intestine bound down to right iliac fossa by firm adhesions, and some papillomatous

growth; subacute general peritonitis. There was an abscess cavity behind uterus of old standing.

Æt. 47. History of left inguinal hernia, easily reducible until 4 days before she came in, it then was down and went back with difficulty; since abdominal pain, vomiting now fecal, and constipation. A distinct rounded, resonant swelling to left of umbilicus in position of greatest pain. Operation revealed a firm, strong band crossing a coil of small intestine, divided; died following day. P.M.—Bowel deeply congested for about 9 inches of its length, with localised peritonitis, remains of a band arising from left inguinal canal.

Æt. 53. Intestinal obstruction coming on for 12 months, with emaciation. Colotomy performed; lived 25 days. P.M.—Malignant disease of sacral glands pressing on the rectum.

GENITO-URINARY SYSTEM.

Hydrocele.—C. 5; 2 right, 3 left. The present collection of fluid in existence, 16 months, 8 months, 2½ years, 14 months, and 12 months. In one case there had been 5 previous tapplings; in another 1. *Treatment.*—Tapping 2; tapping followed by injection of iodine 3.

Epididymitis.—C. 1, R. 2.

Acute.—Admitted with epididymitis left side, and suffering from gonorrhœa (also as a complication in a case of stricture).

Tubercular.—R. 2. In one case both sides affected, in the other right only, one with symptoms of phthisis; no family history of phthisis in either case; one had sinuses, the other hernia testis.

Retention of urine.—C. 8, R. 3, D. 3. 10 due to stricture, 2 to enlargement of prostate, 1 phimosis, 1 gonorrhœa. *Treatment.*—Warm bath and opiate, and later by catheterism 7, catheterism 4, perineal puncture 2, perineal section 1; in 2 internal urethrotomy, and in 2 perineal section afterwards performed. *Complications.*—Urinary fistula 1, cystitis 4, epididymitis 1, renal disease 3.

Fatal cases.—P.M.—*Æt.* 75. Extravasation of blood round prostate, cystitis, granular kidneys, aortic disease, bronchitis, and emphysema.

Æt. 48. Stricture, cystitis, pyelonephritis, pleuro-pneumonia.

Æt. 50. Stricture for 30 years. Perineal puncture and afterwards perineal section; renal disease.

As a simple complication of injury 8.

Stricture of Urethra.—C. 18, R. 4, D. 4. Gonorrhœa the probable cause in 21, but denied by one case, 3 traumatic, one at the meatus caused by cicatrix, the result of soft sore, doubtful 1. *Complications.*—Retention of urine 9, cystitis 8, urinary fistula 3, urinary abscess 2, psoriasis inveterata 1, hæmorrhoids 1, bronchitis 1, rigors during the treatment in 10 cases. *Treatment.*—Interrupted catheterism 13, continuous 2; operations: incision 1, perineal puncture 2, perineal section 4, internal urethrotomy 4.

Fatal cases.—In each a stricture, in one case at junction of membranous portion of urethra with bulb, in the others in membranous portion.

Æt. 50. Cystitis, pyelitis, granular kidneys.

Æt. 38. Contracted granular kidneys, uræmia.

Æt. 39. Cystitis, pyelitis, suppurative nephritis.

Æt. 48. Cystitis, pyelo-nephritis.

It was the cause of retention in 10 cases; perineal abscess 4; urinary fistula 7; extravasation of urine 6.

Extravasation of urine.—C. 4, D. 3. In 6 of these it was due to stricture, in 1, æt. 10, to injury to perinæum causing rupture of urethra; in the cases which were cured the extravasation had been in existence 20, 24, 36 hours, 4 days, whilst in the fatal cases it had existed unrelieved 4 days, 5 days, and in one case (pyæmia) 3 weeks. In all perineal section performed with, in most, free incisions. One case, cured, had severe and repeated rigors, with profuse sweating. One fatal case also had advanced epithelioma linguæ.

Calculus vesicæ.—C. 3, R. 2, U. 1. Male, æt. 4. Admitted with fracture of femur; developed scarlatina, whilst convalescing from the fever showed symptoms of stone; a small uric acid calculus removed by lateral lithotomy; patient left hospital cured 18 days later.

Male, æt. 10. Symptoms for 7 years; lateral lithotomy and removal of single calculus; a sinus remained for a long time but patient left cured 84 days after operation.

Æt. 43. Symptoms for 4 weeks; passed a small calculus 5 days before admission; symptoms continued but no calculus found whilst he was in hospital; he left cured.

Male, æt. 67. Symptoms for 2 years; stone discovered; refused operation.

Æt. 49. Symptoms of varying intensity for 5 years; stricture of urethra; calculus in neighbourhood of prostate. Operation refused. Was readmitted 14 days later, but again refused operation.

Calculus of kidney.—Male, æt. 27. D. Pain in left loin, with other symptoms of calculus, for 8 years. A large branched calculus removed by lumbar incision. The patient did not rally from the shock of the operation, but died next day.

Hydronephrosis.—Æt. 8. R. Was in hospital for same disease last year; he was tapped 8 times. This year he was admitted 6 times and tapped 7, quantity removed varying from 26 to 37 oz. each time. Followed an injury to the left kidney.

Gonorrhœa (admitted as such).—Females 67. C. 61, R. 4, U. 2. *Complications.*—Warts 16; bubo 6; œdema of labia 5; labial abscess 4; adhesion of labia 1; fissure of rectum 2; hæmorrhoids 1; salivation 2; pregnancy 1; epilepsy 1; congenital syphilis 1. As a complication of syphilis 48. Soft sore 22.

Soft Sore.—Males 9, females 29. C. 35, R. 2, U. 1. *Complications.*—Males: phimosis 7; phagedenic 6, in two of which severe hæmorrhage. Females: vaginal discharge (probably gonorrhœal) 22; bubo 8; warts 1; fissure of rectum 2; hæmorrhoids 1; ischio rectal abscess 1; œdema of labia 3; hypertrophy of labia 2; labial abscess 1; scabies 5; phagedenic 4; 1 transferred for typhoid fever.

DISEASES OF LOCOMOTORY SYSTEM.

Of hip-joint.—Males 35, females 26. C. 27, R. 30, D. 4. *Incipient* (1st stage).—C. 10, R. 7, D. 2. Males: disease of right hip-joint 2, left 9. Females: right 5, left 3. *Chronic* (2nd and 3rd stage).—C. 16, R. 21, D. 2. Males: right 9, left 13. Females: right 6, left 11. Old excision 1; ankylosis 1; hysterical, both hips affected, 1. With abscesses 12; sinuses 14; displacement of head of femur 2. *Cause.*—Ascribed to injury 21; following scarlatina 1; rheumatism 3; twist of the leg 1; no cause could be assigned in the remainder. Incision of joint 1; excision 13; operation refused 1; incision of abscess 9; aspiration of abscess 3, one four times. With disease of elbow 1; of knee 1; talipes 1. Developed erysipelas 2; measles 1; scarlatina 1; diphtheria 1; typhoid fever 1; hooping cough 2.

Fatal cases.—Male, æt. 13. Pain in left hip-joint for 2 months. Symptoms of very slight incipient mischief. In hospital 18 days. Died from typhoid fever.

Female, æt. 5. Second admission. Disease of right hip of 10 months' duration. No evidence of abscess. 14 days after return she developed diphtheria, from which she died 12 days later.

Male, æt. 28. Disease of left hip-joint for 15 months. Large abscess of left thigh. Symptoms referable to joint very slight. Abscess opened antiseptically; counter opening afterwards made. Another abscess formed and was opened to the right of sacrum; continuous discharge from sinuses; profuse perspirations; occasional diarrhœa; hectic temperature; great emaciation. Death from exhaustion. No P.M.

Female, æt. 33. Symptoms, with gradual formation of an abscess above left hip-joint. Antiseptic incisions. Decomposition of contents. Abscess inner side of thigh. Sinuses leading into pelvis opened up, but full extent it was not possible to ascertain. Died from exhaustion. P.M.—Extensive caries of hip-joint, the head having been considerably eroded; several suppurating cavities leading into pelvis, extending around the uterus and other viscera; many peritoneal adhesions near pelvis.

Of knee-joint.—Males 47, females 33. C. 32, R. 47, D. 1. *Incipient.*—Of the right knee, males 10, females 3; of the left, male 1, female 1; of both knees 2. *Chronic.*—Of the right knee, males 10, females 6; of the left knee, males 16, females 10. Ankylosis, males 3, females 6. Old excision, males 4, females 3. Rheumatoid, males 3, females 2. Rheumatoid arthritis 1; rheumatism 2; gonorrhœal rheumatism 2. *Complications.*—Abscess of hip 1; disease of shoulder-joint 1. Admitted with suppuration in the joint 6. In 4 cases free incision, in 6 excision of the joint; amputation of the thigh 12; osteotomy of femur 1, with osteotomy of tibia 1. In 2 cases of old excision of the joint amputation was required. The knee was forcibly bent under anæsthetic in 9. There were symptoms of phthisis in 3. Contracted erysipelas after excision 1.

Fatal case.—Male, æt. 46. Admitted with suppuration in the joint following

incision for popliteal bursa. Sinuses and much discharge. Amputation of thigh. Died 5 months later from hectic and exhaustion. P.M.—Necrosis of femur, including head of bone, acetabulum, and ilium; abscesses in thigh and pelvis.

Of ankle-joint.—Males 5, females 12. C. 4, R. 13. Acute 3, chronic 11; gonorrhœal 1; old excision 2. Incisions into joint 1, excision of joint 2; refused operation 1. A chronic case with sinuses contracted erysipelas. 3 re-admissions.

SUMMARY OF INJURIES.

GENERAL INJURIES.

Burns.—Males 14, females 12. C. 16, R. 3, D. 7. General 6; face 4; face and head 1; face and chest 2; face and upper extremity 4; face, chest, and upper extremity 2; upper extremity 1; trunk 2; buttocks and hands 1; lower extremity 3.

Causes.—Molten metal 1; red-hot coals from fire-box of engine 1; upsetting of paraffin lamp 2; wearing apparel catching fire 9; covering of cradle 1; fell on the fire 2, during epileptic seizure 3; explosion of gunpowder 3, gas 1, coal dust 1, benzoline 1, paraffin 1.

Complications.—Injury to globe of eye, requiring excision, 1; to finger, requiring amputation, 1; scarlatina 2; shock 8.

Treatment (primary).—Carron oil 12, terebine and oil 10, vinegar and whiting 2, almond oil 1, carbolic oil 1. In one case sponge-grafting was afterwards tried without advantage.

Fatal cases.—Male 1, females 6. *Æt.* 45, collapse; *æt.* 1½, 2, 6, 7, 63, shock; *æt.* 42, on the 50th day from pneumonia.

Scalds.—Males 12, females 11. C. 14, R. 1, D. 8. General 2; face 2; face and trunk 3; face, chest, and arms 4; trunk 3; trunk and arms 2; trunk and lower extremities 1; lower extremities 2; upper and lower extremities 1; fauces 3.

Causes.—Upset of vessel containing scalding liquid 15; fall into hot water 3; splash from boiling sugar 1; bursting of a steam pipe 1; sucking the kettle or teapot 3.

Primary treatment.—Carron oil 9; terebine and oil 7; almond oil 2; vinegar and whiting 1; steam kettle 3. One case died soon after admission. In one tracheotomy was performed for complication.

Fatal.—Males 2, females 6. Male, *æt.* 40, females, *æt.* 14 and 15 months, shock; male, *æt.* 10 months, females, *æt.* 1 and 1½, diarrhoea, with, in two latter cases, lung complication; *æt.* 2, convulsions; *æt.* 9 months, shock and pre-existing lung mischief.

LOCAL INJURIES.

HEAD.

Scalp wound.—Males 39, females 14. C. 41, R. 11, D. 1. Exposed bone in 22; shock marked in 8; inequality of pupils 3; epileptic 2; considerable

hæmorrhage in 8, in 2 of which temporal artery divided. *Complications.*—Slight concussion 5; wounds of other parts 4; synovitis of ankle 2, of elbow 1; fracture of ulna 1, of right radius 2; strangulated umbilical hernia 1; acute tonsillitis 1; contracted erysipelas 2.

Fatal case.—Female, æt. 63. Extensive scalp wound with exposure of bone and wound of temporal artery; developed symptoms of general bronchitis, and died 4th day. P.M.—Besides above injuries there was a strangulation of the intestine in a large umbilical hernia, and fatty degeneration of liver.

Concussion.—Males 32, females 5. C. 35, D. 2. *Complications.*—Wound of scalp 7, in 2 of which the bone was exposed; of face 3, of hand 1; contusion of scalp 7, face 5, chest 2; shock marked in 4; inequality of pupils 3; fracture of clavicle 1; compound of nasal (developed erysipelas) 1; retention of urine 3; epileptic 3.

Fatal cases.—Male, æt. 7. Lived 13 days after injury, a fall downstairs. P.M.—No coarse lesion was found.

Female, æt. 37. Was knocked down and run over. Lived only 35 minutes after admission. P.M.—Superficial bruising on the orbital surface of both frontal lobes, on under surface of left occipital and median surface of left hemisphere; rupture of left sterno-mastoid muscle and wound of hand.

Fractures of the skull.—A. *The vault*—

(1) *Simple.*—Males 2, female 1. C. 2, D. 1. Æt. 24. Simple depressed fracture above and behind left mastoid process; no symptoms.

Æt. 7 months. Near junction of right parietal bone with occipital; linear?.

Fatal case.—Æt. 16. Fall of 12 feet; symptoms of cerebral irritation passing into coma, and death in 2 days. P.M.—A crack extending from the right zygoma in the line of the suture between parietal and squamous portion of temporal, and between parietal and occipital bone, backwards nearly to occipital protuberance. A good deal of black blood over all the convex surface of brain; right temporo-sphenoidal lobe softened; various small hæmorrhages in or near surface of brain. The hæmorrhage on the surface came from a largish branch of the middle cerebral artery.

(2) *Compound.*—Males 5, female 1. C. 5, D. 1. Linear fracture of frontal 2, of orbital ridge with symptoms of concussion 1; linear of parietal 2.

Fatal case.—Æt. 62. Fall down sewer head foremost. Fracture of right parietal; some shock; loss of power in left arm noticed mid-day. This became complete by the following morning, and he had inability to swallow, with signs of compression. Trephining was performed 2 days after admission, and a large blood clot was found outside the dura mater. Patient died next day. P.M.—Fissure in parietal with effusion of blood, from rupture of meningeal artery, outside dura mater; some superficial extravasations of blood with laceration of under surface of each prefrontal lobe.

(3) *Compound depressed.*—Males 5, female 1. C. 1, R. 1, D. 3. Æt. 7. Depressed fracture of frontal; no symptoms.

Æt. 75. Depressed of frontal bone; no symptoms. Only remained for 1 day.

Fatal cases.—Æt. 1 year 3 months. Lived 1½ hour. Completely uncon-

scious. P.M.—A depressed star-shaped fracture over right parietal eminence, extending into squamous portion of temporal, then backwards to right mastoid; another fracture from anterior fontanelle down left half of frontal bone. Brain lacerated on right side.

Æt. 1½ year. Toasting-fork made a punctured wound of brain 8 days before, at junction of left parietal and frontal bones. Convulsions on morning of admission followed by right hemiplegia. Trephining and elevation gave exit to a quantity of pus. Died next day. P.M.—Some localised softening; meningitis only on right side of brain.

Æt. 2 years 10 months. Fall about 40 feet, catching his head on a gaspipe during descent. Deep irregular wound with depressed fracture over right side of frontal bone, with paralysis of left arm and leg; elevation of a portion which was detached and below the level of surrounding bone. Died next day with stertor and without vomiting or convulsions. P.M.—Extensive fracture; no perforation; no meningitis. At adjoining portions of right third frontal and ascending frontal much bruising of cortex over an area the size of sixpence.

Male, æt. 27. Fall from scaffold. Fracture found under a wound above left eyebrow; conscious, and complaining of pain. On the 3rd day unconscious and struggling; some symptoms of compression. Trephined. Lived 2 days. P.M.—Tip and under surface of left frontal lobe ecchymosed and softened; several small ecchymoses in the white matter; some meningitis.

B. Fractures of the base.—Males 8, females 3. C. 7, D. 4.

Cured.—Male, æt. 14. Vomiting; hæmorrhage from right ear.

Æt. 8. Right post-ocular hæmorrhage; blood on clothes said to have been vomited. Subconjunctival ecchymosis of left eye appeared later, and optic neuritis of the right, with complete loss of vision.

Æt. 24. Hæmorrhage from left ear followed by watery discharge; hæmatemesis; giddiness continued for some time.

Æt. 13. Hæmorrhage from right ear and nostril, the latter followed by a yellowish white discharge.

Æt. 34. Hæmorrhage from right ear and frequent vomiting, followed for nearly three weeks by continuous discharge from the ear; he had also diarrhœa with blood-stained motions; some facial paralysis.

Æt. 40. Hæmorrhage from left ear and nostril; great irritability and inequality of pupils; retention of urine; no optic neuritis.

Æt. 3. Fracture of lower jaw; hæmorrhage from nose, ears, and mouth; convulsions; strabismus.

Fatal cases.—Æt. 30. Lived 2 days. P.M.—Hæmorrhage over right hemisphere; laceration and contusion of frontal and right parietal lobes.

Female, æt. 62. Lived 1 day. P.M.—Splintering of left lesser wing of sphenoid; some hæmorrhage on each side under the arachnoid; no gross injury to the brain.

Female, æt. 49. Lived 1 day. P.M.—Fracture on each side of the occipital bone, also left orbital plate; whole of each prefrontal lobe ploughed up and destroyed by a large blood coagulum; fracture of left ribs, one to eight inclusive.

Female, æt. 1 year 9 months. Lived 14 days. P.M.—Fracture of left side of occipital bone extending forward to parietal, a separation of petrous portion from sphenoid and occipital; meningitis with some points of suppuration, and a considerable quantity of granular blood between left petrous portion and the temporal.

INJURIES OF THE ABDOMEN, CHEST, SPINE, AND PELVIS.

Injuries of the abdomen.—Males 11, females 3. C. 11, R. 2, D. 1. There was marked vomiting after admission in 7 cases; shock in 6; hæmaturia in 3, 1 of which also had retention of urine and pleurisy; in 1 case there was evidence of a ruptured liver; 1, a bleeder, had vomiting of blood, and also passed blood per rectum.

Fatal case.—Male, æt. 17. Crushed between buffers. Great collapse; severe abdominal pain; vomiting of blood (coffee grounds); restless and irritable. Lived 17 hours after he came in. P.M.—Small rupture with somewhat ecchymosed edges in upper part of small intestine.

Injuries of the Chest—

Fracture of sternum.—Males 3. C. 2, D. 1. Cured, æt. 36. Fell on a barge from a plank some distance above. Fracture in 2 places, at juncture of 2nd rib, and between 3rd and 4th; fracture of left ribs, 3rd, 4th, 5th, 6th, and 7th; 5th and 7th in two places; of right ribs, 1st, 2nd, 3rd, 4th, 5th.

Æt. 67. A horse fell forwards on to the man's chest. Fracture on a line with the 3rd rib.

Fatal case.—Æt. 28. Jumped from a tramcar whilst it was moving, and falling was struck by the step. Lived 3 hours. P.M.—Transverse fracture of 4th lumbar, and separation of transverse processes of 3rd and 4th; fracture of sternum at level of 3rd cartilages. Ribs, left side, 4th to 11th inclusive, 5th and 6th in two places; right side, 3rd costal cartilage, 8th, 9th, and 11th ribs, 8th in two places.

Fracture of ribs.—Males 19, females 2. C. 12, R. 6, D. 3. In the majority of the cases more than one rib was broken, 7 by direct, 12 by indirect violence; in 2 it was doubtful. *Complications.*—Shock 5; hæmoptysis 4; cough 5; bronchitis 1; pleurisy 1; pneumonia (fatal) 1; emphysema 2; hæmatothorax and pneumothorax (fatal) 1; emphysema and pneumothorax (fatal) 1. *Other injuries.*—To abdomen 1; scalp wounds 2. *Other complications.*—Retention of urine 1; syphilitic ulceration of fauces 1; fracture of radius 1.

Fatal cases.—Males. Æt. 37. Thrown from a light cart 7 days before admission, when there was already advanced pneumonia. Lived 3 days. P.M.—Fracture of 3rd, 4th, 5th, 6th, 7th, 8th, 9th ribs close to angles; old adhesions of right pleura, with some pneumonia of each base.

Æt. 40. Night before admission supposed to have been thrown out of cart collapse; hæmatothorax; pneumothorax. Lived 3 days. No P.M.

Æt. 40. Fall 15 feet 24 hours before admission, followed by hæmoptysis, fractured ribs, emphysema, pneumothorax, pleurisy. Lived 7 days. P.M.—Fracture of ribs, 5th to 10th inclusive, on right side; pleurisy with effusion; pulmonary collapse.

Fractures of spinal column.—C. 1, R. 1, D. 1.

C. Male, æt. 3. 2 days before admission falling branch of a tree struck him in the back; painful angular swelling over the 4th lumbar, disappearing when he turned over on his face. Put up in plaster-of-Paris jacket. In hospital 54 days.

R. Æt. 25. Fall 25 feet, striking the upper part of dorsal spine against a wall; paraplegia, with loss of sensation as high as ensiform cartilage; retention of urine. Was in hospital 225 days.

D. Æt. 23. Fall 12 feet on his head; paraplegia, with loss of sensation up to $1\frac{1}{2}$ inches above the umbilicus; priapism; retention of urine; cystitis. P.M.—Fracture of 8th dorsal vertebra; myelitis; cystitis, with some pyelitis.

Fracture of pelvis.—M. 12. C. 9, R. 1, D. 2. Of these the ilium was broken in 6; this was followed by retention of urine 1; delirium tremens 1. Of the more important,

C. Æt. 2 years 5 months. Fracture of ramus of pubes on right side, with large hæmatoma over seat of injury.

Æt. $3\frac{1}{2}$ years. Fracture of both pubic bones, and rupture of urethra, requiring external urethrotomy.

Æt. 56. Fracture of descending ramus of pubes on right side.

Æt. 24. Fracture on right side of the pelvis, with increased mobility of right half, and abdominal injury.

D. Æt. 37. Crushed between a truck and a brick wall; much collapse; blood in the urine; cough, which had existed before accident, increased in severity, and patient died 5 days after admission. P.M.—Fracture of left pubic base; left pleuropneumonia; mitral insufficiency.

Æt. 28. Crushed by the fall of a heavy weight; collapse; fracture of pubic bone, each ramus on right side, also of right tibia and fibula. (See Pyæmia, Table II.)

INJURIES OF THE UPPER EXTREMITIES.

Wounds.—C. 17, R. 8. Axilla 1; arm 7; forearm 12; hand 5; of the left side 14, right 11; lacerated 13; incised 4; contused 2; punctured 2; gunshot 1; poisoned 3. Wound of artery 4; median nerve 2; ulnar 2; division of tendon 3.

Rupture of brachial plexus.—Male, æt. 34. Left arm useless from injury caused by an attempt to save himself by catching at rail when falling down a ship's hold 15 weeks before. Amputation.

Dislocations.—

Humerus.—C. 3. Subcoracoid 2; subglenoid 1; of the former one had been in existence over 3 weeks, the other was accompanied by fracture of ribs, severe scalp wound, exposing bone, and followed by pneumonia.

Forearm.—C. 2. 1 backwards, and 1 chiefly inwards, with fracture of neck of radius. Thumb: compound 2, simple 1; of the former 1 had been reduced 8 days before admission, and was followed by cellulitis of the forearm.

Fracture of scapula.—C. 2. Æt. 58. Thirteen days before admission fell 24 feet. Transverse fracture of scapula below spine. Admitted for lymphangitis of left arm following an injury to the bursa, received at the time of the accident.

Æt. 19, tram accident. Comminuted fracture of left scapula, also fracture of left humerus.

Fracture of humerus (simple).—C. 4, R. 1. M. 4, F. 1. 4 due to direct violence, 1 doubtful; 3 of surgical neck; 1 middle of shaft; 1 separation of lower epiphysis. *Complications.*—Fracture of radius and ulna 1; synovitis of shoulder-joint and delirium tremens 1; scalp wound 1.

Fracture of humerus (compound).—M. 1, F. 1. C. 2. Internal condyle with fracture of ilium 1, T-shaped into elbow-joint 1; compound comminuted 1, æt. 42. Fell on some spiked railings; compound comminuted fracture into shoulder-joint requiring primary excision of head of bone.

INJURIES OF THE LOWER EXTREMITIES.

Dislocation of femur.—M., æt. 23, caused by catching the foot in a rope when trying to jump over it. Dorsal of left hip reduced by manipulation under ether.

Dislocation of patella.—Æt. 21. Whilst pulling slipped, the knee being bent inwards; patella displaced outwards and resting on its inner edge—it was easily reduced—had been dislocated fourteen months previously.

Dislocation of astragalus.—M., æt. 55. Fall on left foot, twisting the foot inwards, dislocating the body of astragalus and fracturing the neck; reduced by manipulation.

Fractures of femur.—75. M. 56, F. 19. C. 58, R. 12, D. 5. Simple, M. 48, F. 13. C. 48, R. 11, D. 2. Of these 37 were of the right and 24 of the left femur, whilst 21 were caused by direct, 38 by indirect violence, in the others the cause could not be discovered.

In one female patient there was atrophy of the limb and amputation was performed; in a male there was caries of the bone, and also of pelvis; here there was fair union. T-shaped fracture into knee-joint 1; separation of epiphysis 1; separation of external condyle 1; double fracture of shaft 1, comminuted 2, of each femur 1; in one case, æt. 48, there was no union, and four months after admission Dieffenbach's operation was performed, but the thigh required amputation two months later. *Complications.*—Fracture of clavicle 1, humerus 1, tibia and fibula 1, patella with ankylosis of hip 1; synovitis of knee 1; delirium tremens 1; erysipelas 1; scarlatina 2, of these one showed symptoms of stone, and lateral lithotomy was successfully performed. One case admitted for readjustment of splint.

Fatal cases.—Æt. 6 months. Fracture of right femur in middle third of shaft Died 56 days after admission from pertussis.

Æt. 65, admitted 2 days after indirect fracture of left femur in its upper fourth, died 7 days after admission with symptoms of acute bronchitis.

There were also twelve fractures of the neck, M. 6, F. 6. C. 10, R. 1, D. 1. Of these 10 were intracapsular; 9 impacted and 1 unimpacted; extrascapular 2, both impacted. *Complications*.—Fracture of olecranon 1. Fatal case. M., æt. 80. Impacted intracapsular of right femur caused by fall on hip 5 days before admission. Lived 23 days. P. M.—Edema of lungs with a cavity in posterior part of right, probably due to infarct.

Compound comminuted.—2 D. Both railway men, æt. 30 and 52. Died a few hours after admission from shock. In one the thigh was amputated. *Complications*.—Compound comminuted fracture of humerus 1, compound fracture of metacarpal 1.

Fractures of patella.—M. 19, F. 5. C. 12, R. 10, D. 2. Right 13, left 11. Caused by muscular action 14, direct violence 6; probably by both combined 4. In one case the other patella had been broken, in one operation was required. *Complications*.—Contusion of leg 1; fracture of femur—in this case there was ankylosis of the hip; gout 1; contracted scarlatina 1. In one case the joint was aspirated with advantage.

Fatal cases.—F., æt. 54. Died suddenly 33 days after admission for transverse fracture of the left patella. P. M.—Fatty heart, scar of ovariectomy incision and tendency to ventral hernia.

M., æt. 42. Ununited fracture of left patella caused by muscular action twelve months before. Tenotomy of the quadriceps extensor 8 days after admission; bone sutured under antiseptic precautions 23 days later, followed by suppuration in the joint; amputation of thigh 8 days after that; died 2 days later. P. M.—Chronic bronchitis and emphysema; dilated right side of heart; liver fatty and partly cirrhotic.

Fractures of tibia.—44. M. 39, F. 5. C. 19, R. 25.

Simple.—M. 37, F. 4. C. 15, R. 25. 21 of the right and 20 of the left tibia; 21 due to direct, 18 to indirect violence; in 2 doubtful. Transverse fractures 27, oblique 6, comminuted 4, ununited 1, of internal malleolus 2, old fracture 1; becoming compound 1; the injury caused sloughing of skin 1; 1 was a case of refracture. *Complication*.—Gout 1; fracture of fibula of opposite leg 1.

Compound.—C. 2. M. 1, F. 1. 1 oblique, 1 transverse, the former due to direct, the latter to indirect violence. In 1 antiseptics employed; in the other case the injury has occurred a week before admission, but the fracture had not been recognised.

Compound comminuted.—C., æt. 7. Left tibia, due to direct injury from a tramcar. Antiseptic dressing.

Fracture of fibula (simple).—52. M. 45, F. 7. C. 13, R. 39. Of these 10 accompanied by rupture of internal lateral ligament, 27 were fractures of the left fibula, 25 of the right; 38 were due to indirect and 14 to direct violence. *Complications*.—Synovitis of knee 1, ankle 3, wrist 1; fracture of radius 1, com-

pound of metatarsal bones on same side 1; delirium tremens 3, 1 of which had bronchitis.

Fractures of tibia and fibula.—123. M. 97, F. 27. C. 61, R. 57, D. 6.

Simple.—M. 86, F. 25. C. 54, R. 57, D. 2. Of the right tibia and fibula 67, of the left 44. Of these 77 were caused by indirect, 29 by direct violence; 1 appeared to be the result of muscular action; 4 ununited (2 cases, in one of which successful operation); 1 a case of refracture; in 1 the tibia was broken in two places; 9 the tibia was comminuted; 1 followed by sloughing of skin and necrosis of the tibia, also two attacks of erysipelas, 1 followed by suppuration at point of fracture, 2 contracted scarlatina. *Complications.*—Fracture of external condyle of humerus 1, radius 1; partial dislocation of knee 1; synovitis of knee 1; scalp wound 1; 4 suffered from delirium tremens, 1 was the subject of secondary syphilis.

Compound.—C. 9. M. 7, F. 2. Of the right leg 4, left 5; due to indirect 5, direct violence 4; into ankle-joint, with fracture of astragalus 1; in 2 removal of bone, one afterwards requiring amputation of the leg; 3 primary amputation of leg (1 compound fracture of other leg); contracted erysipelas after amputation 1.

Compound comminuted.—D. 4.

Railway porter, æt. 52. Smash of left leg; much shock. Died soon after amputation of thigh.

Stationmaster, æt. 40. Smash of both legs; great shock. Rallied somewhat. Amputation of each thigh performed. Died six hours afterwards.

Drayman, æt. 32. Kick from a horse. Upper end of tibia much comminuted; amputation of lower one third of thigh. Died four days later from delirium tremens.

Potman, æt. 44. Fell from a ladder. Fracture of right leg a few inches below knee; fracture of right radius; scalp wound with exposed bone. Fragments of tibia removed; antiseptic dressings. Wound became septic. Delirium tremens; amputation of thigh 10th day. Died 11th day. P.M.—Fatty liver.

SPECIAL TABLE I.—*Hernia.*
Inguinal.

No.	Occupation.	Sex.	Age.	Duration of hernia.	Duration of strangulation.	Treatment.	Structure of hernia.	Result.	Remarks.
1	Carman	M.	45	10 years	2 hours	Sac opened and radical cure	Enterocoele	C.	Incision made down to sac exposed another closed cavity in front, probably tunic vagin; intestine reduced before sac opened; the sac was dissected up, and removed after ligature of neck; there was varicocele of the same side; sloughing of wound and suppuration in scrotum. Broncho-pneumonia. Stricture in situation of internal abdominal ring; some dark fluid and about five inches of congested intestine, with small amount of omentum. Slight amount of fluid in the sac; no bad symptom after operation.
2	Labourer	M.	28	4 years	30 hours	Sac opened	Enteropileocoele	C.	Intestine congested and in part ecchymosed; much inflammatory fluid in sac.
3	Smith	M.	49	30 years	12 hours	"	"	C.	The hernia had been reduced by gentle taxis, but, symptoms continuing, two days after admission operation as for hernia performed, incision being carried higher; coil of small intestine found near wound, from which fecal matter escaping, this was attached to wound. Died from peritonitis.
4	Carpenter	M.	49	?Congenital	8½ hours	Sac opened and radical cure	Enterocoele	C.	Great congestion of intestine, much blood-stained fluid; left hemiplegia.
5	Porter	M.	28	?Congenital	3 days	Exploratory?	Enterocoele	D.	Intestine large in amount, deeply congested, with several ecchymosed spots upon it; sac contained much fluid; the sac sloughed. Bronchitis.
6	Miller's labourer	M.	52	25 years	4 days	Sac opened	Enterocoele	D.	
7	Bricklayer	M.	44	20 years	2 days	Sac opened and ligatured <i>in situ</i>	"	D.	

SPECIAL TABLE I.—*Hernia (continued).*

No.	Occupation.	Sex.	Age.	Duration of hernia.	Duration of strangulation.	Treatment.	Structure of hernia.	Result.	Remarks.
8	Clerk	M.	24	? 8 years	2 hours	Sac opened and radical cure	Enterocoele	D.	Hernia reduced without opening sac by extra-peritoneal incision; the sac was then incised with view of performing radical cure, but spermatic cord adherent; sac ligatured with catgut and silk sutures passed through pillars of ring, sac being doubled in. Hæmorrhage. Peritonitis.
9	Butcher	M.	40	20 years	27 hours	Extra-peritoneal	Enterocoele	C.	Delirium tremens.
10	Infant	M.	5 mos.	Congenital	2 days	"	Enterocoele	C.	
11	Carpet cutter	M.	47	? years	36 hours	"	"	C.	
12	Clerk	M.	70	52 years	2 hours	Taxis	"	C.	
13	School	M.	6½	2 years	1½ hour	"	Enterocoele	C.	
14	Infant	M.	1	Congenital	2 days	"	"	C.	
15	Painter	M.	40	20 years	2 hours	Ice	Enterocoele	R.	Inflammatory thickening of parts from use of truss.
16	Night watchman	M.	64	20 years	15 hours	Position	epiplocele	R.	
17	Painter	M.	26	2 years	1 hour	Ice	Enterocoele	R.	
18	Infant	M.	18 mos.	Congenital	—	Radical cure	Epiplocele	C.	The hernia passed into funicular portion of peritoneum, nearly to testis; strong catgut passed through pillars of the ring drawn tightly together. Catheter kept in bladder for six days produced some cystitis.
19	School	M.	10	"	—	"	Enterocoele	C.	Sac ligatured with catgut in five places, commencing just below internal ring.
20	Infant	M.	6 mos.	"	—	Truss	"	R.	Suffering for two days from vomiting and pain. Rupture easily reduced.
21	Blacksmith	M.	32	4 months	—	Suspensory bandage	Enterocoele	R.	Large irreducible.
22	Married	F.	45	12 years	—	Truss	"	R.	Very large labial hernia, left side.
23	Labourer	M.	41	12 years	—	Double truss	"	R.	Double; not completely reducible.

24	Painter	M.	29	3 years	—	Enema	?	R.	Vomiting and abdominal pain just above internal ring; hernia reduced.
<i>Femoral.</i>									
25	Married	F.	66	29 years	10 hours	Sac opened	Enteroplocele	C.	The intestine showed distinct signs of strangulation, having lost lustre at part which had been exposed to pressure, and separating from muscular coat; small piece of inflamed and indurated omentum in sac removed; some ounces of pale fluid escaped after the intestine had been returned.
26	Widow	F.	75	10 years	?	"	Epiplocele	C.	Omentum removed.
27	Married	F.	43	3 years	2 days	"	Enteroplocele	C.	Peritoneal surface of strangulated portion dull, with some white patches on it; some omentum removed; serous fluid in sac and also in abdominal cavity.
28	Widow	F.	47	? 24 hours	24 hours	"	Enterocoele	C.	Intestine bright but black; a good deal of extravasated blood in the sac.
29	"	F.	74	2 days	2 days	"	"	C.	Intestine congested; some blood-stained fluid in the sac.
30	"	F.	46	?	83 hours	"	"	C.	Intestine darkly congested, not ecchymosed; piece about size of filbert.
31	"	F.	73	49 years	5 days	"	Enteroplocele	D.	Congested knuckle of intestine, with some semi-gangrenous omentum; the latter was removed. Erysipelas. Recovered from erysipelas but died from exhaustion. Granular kidneys.
32	"	F.	74	? 24 hours	24 hours	"	Enterocoele	D.	Intestine black; sac contained dark blood-stained fluid. Peritonitis. No P.M.
33	"	F.	65	20 years	6 days	"	"	D.	One portion of intestine very black, the remainder healthy. Shock.
34	Baker	M.	56	20 years	12 hours	"	"	D.	P.M.—Strangulated portion quite black; the peritoneal surface destroyed; gut evidently gangrenous. Peritonitis.
35	Labourer	M.	45	24 hours	24 hours	"	Enteroplocele	D.	Intestine, which much congested, returned; omentum removed, and sac well obliterated by sutures; this was followed by slough of portion of intestinal wall. Operation for artificial anus. Death from peritonitis.

SPECIAL TABLE I.—*Hernia (continued).*

No.	Occupation.	Sex.	Age.	Duration of hernia.	Duration of strangulation.	Treatment.	Structure of hernia.	Result.	Remarks.
36	Married	F.	44	28 years	3 days	Sac opened	Enterocoele	D.	Patient, in greatly collapsed condition, died on operating table. The gut was gangrenous. Hydronephrosis of each side; slight cystitis and ulceration of vulva.
37	Widow	F.	67	2 years	4 days	Extra-peritoneal operation	Probably enterocoele	D.	
38	Married	F.	32	4 years	3 days	Ice	"	C.	Readmission of No. 39. Patient in a low condition; symptoms of strangulation slight. No operation.
39	Nurse	F.	66	2 years	12 hours	Taxis	"	C.	
40	"	F.	66	2 years	2 hours	"	"	C.	
41	Widow	F.	82	1 year	16 hours	Ice bag	Enterocoele	D.	
42	"	F.	62	3 years	—	—	? Epiplocele	R.	Double hernia; right 5 years, left 2½ years.
43	"	F.	66	5 years	—	Double truss	Enterocoele	R.	
<i>Umbilical.</i>									
44	Married	F.	52	20 years	2 days	Sac opened	Enterocoele	C.	See 'Lancet.'
45	"	F.	58	? years	3 days	"	"	D.	Collapse. Chronic bronchitis; emphysema; adherent pericardium.
<i>Ventral.</i>									
46	Carman	M.	38	4 years	2 days	Ice bag	Epiplocele	R.	

SPECIAL TABLE II.—PYÆMIA.

(Admitted with the disease.)

Male, æt. 1 month. Vaccinated when 5 days old. A few days later an abscess formed over left parotid region. This was incised. Ten days before admission convulsive seizures; 4 days' jaundice and swelling of left arm, and for a few hours retention of urine. When admitted jaundice, distended abdomen, a dusky red patch over epigastrium, no œdema of arm, but swelling of both legs. Lived 1 day. P.M.—Pus in the left sterno-clavicular and both hip-joints; peri- and myocarditis; excess of fluid in peritoneal cavity, and a large abscess behind peritoneum extending into the pelvis; fluids bile stained.

Male, æt. 16. Zinc worker. "Bad finger" 14 days. Symptoms commenced 5 days before admission, which was on November 23rd, with a feeling of chilliness, thirst, and loss of appetite; great restlessness during the succeeding night, and next day swelling in the left groin. On the following day (21st) he fell, striking his right shoulder. A swelling immediately appeared. Much sweating since the 19th, and latterly continuous delirium. No rigors. When admitted feverish; temp. 103.4° ; foul tongue; sordes on lips; acute tenderness in left groin, extending down thigh and over abdomen; pain and tenderness in both knee-joints; no swelling; the same only with swelling over right scapula, and lower end of right tibia; there was a small sore over lower part of right leg, and also other slight sores in various parts; urine normal; thoracic organs appeared healthy. 10.30 p.m.—Incision made into fluctuating swelling behind the right shoulder; pus evacuated; the bone rough and bare; an incision also made over right shin; no pus. Ordered 3 grs. quinine 6tis h.

27th.—Superficial redness along inner side of left upper arm, with swelling and tenderness most marked over internal condyle. There is tenderness over internal condyle of left knee, and over hepatic region.

29th.—Physical signs pointing to double basic pneumonia, sweating becoming marked symptom.

30th.—Some diarrhœa; herpes on lip and on back of chest; tenderness over right sterno-clavicular joint, some fluid; resp. 63; pulse 140; subsultus.

December 2nd.—The patient has steadily got weaker, and to-day passes urine and motions involuntarily; large fluctuating swelling over posterior part of scalp; delirium low and muttering; respiration difficult, and face purplish; death from extension of lung mischief. The temperature varied from 101° at

8.30 p.m. of the 24th to 107° at 10.30 p.m. on December 2nd, three quarters of an hour before death; pulse 25th, 108; December 2nd, 152.

Post-mortem.—Almost whole of right scapula stripped of periosteum, and tissues around infiltrated with pus; lower end of left humerus, external occipital protuberance, right tibia, left ventri ilii, lower third of left femur, found stripped of periosteum; pus in right sterno-clavicular, left shoulder, left elbow, left hip, and left knee-joints. Pyæmic abscesses in lungs and kidneys, but not in liver.

Female, æt. 10. Strong tendency to phthisis. Pain in left arm and elbow, commencing 5 or 6 weeks before admission, ascribed to injury from a fall. Swelling appeared; pain very severe; no rigors, but night sweats; feverishness and thirst; pain in knees and right side of chest followed.

25th.—When admitted, large fluctuating swelling round left shoulder and left elbow-joints. Temp. 103·6°. Incisions made over shoulder, upper end of the humerus bare.

27th.—Incisions into swelling over the left elbow; pus.

29th.—Great restlessness; face flushed; complaining of pain in arm and knees. Respiration 60. Physical signs of consolidation at right base. No cough. Discharge offensive.

30th.—Temp. a.m. 100·4°; pulse 148; resp. 70. Less pain.

Dec. 1.—Great restlessness, much pain, mucous rattling in trachea, cries out frequently; sordes on lips. Temp. 98°; resp. 56; pulse (2.15 p.m.) 133. Face livid; voice feeble. Lived 6 days.

No rigors during illness. Sweating not a marked symptom. Temperature highest on admission; not afterwards exceeding 102·4°, and not falling below 99·8° before the day of death; was normal when last recorded. There was no albuminuria.

Post-mortem.—Left humerus, upper third of shaft bare, and epiphysis separated; also a bare patch above the elbow-joint on anterior surface. Pus in left shoulder, right sterno-clavicular joints. Pleurisy, pericarditis, collapse of posterior borders of lungs, pyæmic infarcts in kidneys.

Male, æt. 16. Injured knee by falling on it three days before admission. Swelling and great pain followed, and when admitted there was a large abscess extending from above right knee-joint, more than half way up the thigh; when incised the bone was found stripped of periosteum beyond reach of finger. Slight petechial eruption on trunk. In the evening temperature was 105°, and he was delirious.

28th.—Temp. a.m. 103°, p.m. 104·4°. Pain in left wrist. Not much relief from incision of abscess in thigh. Pain over sternum and profuse sweating.

29th.—Temp. a.m. 100·6°, p.m. 101°. Pain in both wrists and left arm.

30th.—Temp. a.m. 102·8°, 3 p.m., three quarters of an hour before death, 106·2°. Became gradually unconscious. The petechial eruption spreading to face. Pain on pressure, more or less marked over line of epiphyses, throughout the body; but where he has complained of pain there is also swelling. Still profuse sweating. No rigor. Lived three days.

Post-mortem.—Extensive separation of periosteum over the lower two thirds of right femur. Pus in left wrist and behind manubrium sterni. Some infarcts in lungs.

CASES IN WHICH THE DISEASE AROSE IN THE HOSPITAL.

Male, æt. 18. Injury to right foot seven days before admission (which was on the 1st of Feb.), followed three days later by sickness, and on the fourth day by pain in right knee, much more severe at night, preventing sleep. No rigor. Sweating first noted on admission, when there were two abscesses over the epiphysis of right tibia, great pain and tenderness, and a temperature of 105° . Abscesses incised and bare bone found. Antiseptic precautions.

2nd.—Temp. a.m. 100.8° p.m. 104° . Wound redressed.

3rd.—Temp. a.m. 100.2° p.m. 104.3° . Wound redressed, delirious.

4th.—Bowels confined, feeling "shivery," no rigor. Temp. 105° ; 9.30 a.m. 101.4° p.m. 104.8° .

5th.—Bowels acted. Temp. still high, 105.2° to 101.4° .

6th.—Pleurisy on left side, knee joint distended, 2 oz. turbid serous fluid drawn off; temp. 103.2° — 104.2° .

7th.—3 p.m. pericarditis, with some effusion; temp. 105.4° — 102.6° .

8th.—Temp. 103.6° to 100.8° ; pulse 132; delirium and sleeplessness.

9th.—Quinine, 5 grs. every 8 hours given; this produced symptoms of quininism, but kept the temperature below 102.4° until the 15th, when a counter opening was made below right knee, but his general condition did not improve. On the 12th pain in left shoulder and left elbow-joint, continued restlessness, and almost incessant delirium.

15th.—Temp. 103.6° to 100.8° .

16th.—Temp. 100.8° to 102.8° ; pulse 112; resp. 32. Knee-joint incised and washed out. 17th.—Died.

Post-mortem.—Osteo-myelitis of right tibia, pus in both knees and right ankle; pericarditis; pleurisy on right side, and pyæmic infarcts in lungs.

Male, æt. 28. Admitted April 1, with fracture of pelvis on right side, and fracture of right tibia and fibula, caused by the fall of timber. Shock and retention of urine, which was drawn off, quite clear, and free from blood, next day much blood in urine; catheter tied in.

8th.—Urine alkaline, trace of albumen, some pus and a little blood.

11th.—This morning temp. 105.5° ; pulse 128. Up to this date temperature usually 1 or 2 degrees above that of the morning, but never higher than 102.6° .

18th.—Superficial redness and œdema over right side of abdomen above the groin, some pain here; plaster splint, which was applied to pelvis soon after admission, removed; hot fomentations; is wandering and restless at night; temp. higher and more irregular since the 11th; urine still tinged with blood.

20th.—Severe rigor; temp. 105.8° ; more pus in urine.

25th.—Rigor; considerable thickening about root of penis, and abscess in perinæum, containing offensive pus and broken down blood clot.

26th.—Rigor.

29th.—Swelling of right knee-joint; 3 oz. of pus drawn off on following day.

May 1st.—Rigor; profuse sweating afterwards; sweet smell peculiar to pyæmia.

4th.—A good deal of pus in urine, which very alkaline. Much blood passed during the afternoon and in the evening much vomiting troubled him. A hard swelling above pubes, the size of which increased by injection of fluid into bladder.

7th.—Died, no further symptoms.

The temperature rose during the rigor on the 28th to 107° , but was very erratic after the first rigor, there being no regular variation but a difference of 4 degrees would be noticed in the temperatures taken during the 24 hours.

Post-mortem.—Fracture of horizontal ramus of pubes on right side, also through ascending ramus, and through ala of right ilium. Opening in anterior wall of bladder, communicating with an abscess cavity containing some pus and recent blood, above the pubes. Pus over the fractured ilium and ascending ramus of pubes, also over right internal malleolus and in right knee-joint. No abscesses in internal organs.

Male, æt. 17. Pain about jaw for some time, more severe 2 days and accompanied by swelling. When admitted great swelling, with shining redness of right side of face, closing the eye, and a gangrenous appearance of mucous membrane on right side of mouth; breath most offensive; temp. 102° . Two days after admission (16th June) erysipelas of face set in, temperature going up to 104.2° , and he became violently delirious.

19th.—Great swelling extending across left side of face and forehead, purplish spots over right side of lower jaw. In the evening hæmorrhage from the mouth, and some sloughs separated; violent delirium; pulse 130. Substultus tendinum.

22nd.—Much less redness and swelling, inequality of pupils; still wandering and muttering, but more conscious; mouth much cleaner; no diarrhœa.

24th.—Resp. 56, pulse 160; great weakness.

25th.—Died.

After the 17th, when at 1 a.m. temperature was 105° , it did not exceed 103.6° , until just before death when it rose to 104.6° . The lowest recorded temperature was 101° , and there was no very marked irregularity; as a rule the evening temperature was higher than the morning.

Post-mortem.—Pleurisy, pericarditis, scattered abscesses in lungs; no definite disease of jaw discovered.

Male, æt. 40. Admitted March 31st. Greatly exhausted and in a typhoid condition; inflammatory redness and swelling extending from flank to flank across lower abdomen, reaching to lower ribs on each side, swelling, brawny, and in one place resonant; much œdema of penis with one or two sloughs; swelling in perinæum and down right buttock. This condition had been coming on for 3 weeks; there was a stricture of urethra of some years' standing; temp. 103° . Free incisions made some hours after admission gave vent to sloughs and highly offensive pus. Further incisions were required in various parts during the following days, but general and local condition much improved, the temperature, however, going as high as 104.6° on the 5th, and 104.8° on the 6th, on which date he had a rigor.

8th.—Troublesome delirium, little sleep, dry, fissured tongue, diarrhœa, involuntary evacuations; swelling over head of right radius.

10th.—Abscess over right olecranon, and a patchy redness over left side of chest,

with a redness like that of erysipelas extending from abdomen into thighs. Swelling below buttock on left side, also tenderness of right shoulder.

11th.—Much weaker and sweating profusely, conscious, but hardly able to put out his tongue.

12th.—Increased weakness, incision made into swelling below buttock; no pus; pulse 112, very compressible; no diarrhœa.

13th.—Died; temperature before death 106° , a gradual rise for the preceding 14 hours.

After the rigor on the 6th the temperature kept high, only falling to 101° on one occasion on the 7th; there was some irregularity but it was usually higher at night, 103° — 104.4° .

Post mortem.—Two strictures of urethra; hypertrophy of bladder; behind the second stricture, 7 inches from orifice, a loss of substance through which the urine had escaped. Fatty liver; psoas abscess on right side; pus in right elbow-joint; internal organs fairly healthy.

Cured.—M., æt. 41. Admitted October 11th, 1881, discharged January 4th, 1882. Five weeks before admission pain in right arm followed by swelling and discharge of pus; one week swelling of left arm. When admitted, 2 or 3 granulating wounds of unhealthy appearance over inner side of right arm; eruption of erysipelas over arms and trunk, fading over the trunk; mind clear, pulse 130, weak, compressible; no albuminuria; patient almost in condition of collapse. The eruption continued for 3 weeks, varying somewhat in position, and several incisions were required at various times. On the 7th November the following note was made: Small abscesses formed quickly in the palm of the right hand, and over the dorsum, incisions required. Slight pain draws attention to a small swelling, and an abscess is formed in less than twelve hours; altogether 42 incisions of various sizes have been required to give relief to the abscesses, which have formed in all parts of the body, excepting below the knees. He gradually improved in strength, but the right hand continued swollen and the fingers stiff for a long time. There was a rigor on the 18th October, and temperature went up to 102.2° , but rigor was not repeated; the temperature, which was 104.4° on admission, was usually higher at night than in the morning until the rigor, after that it was more irregular, and there is no record of a higher rise than 99.8° after the 8th November.

SPECIAL TABLE III.—ERYSIPELAS.

(Developed in Hospital.)

1. Male, æt. 32. Anterior portion of hand removed by chaff-cutting machine. Stump trimmed up. Attack developed 30 days later and lasted 9 days. Cured.
2. Female, æt. 73. Concussion and compound fracture of nasal bones. Fragments removed. Attack came on next day. Lasted about 7 days. Cured.
3. Male, æt. 7. Multiple necrosis. Attack came on 12 days after removal of bone from tibia. Lasted 10 days. Cured. This patient was admitted later in the year with another attack.
4. Male, æt. 20. Chronic disease of ankle-joint with sinuses, which were opened up. A drainage-tube introduced 7 days before attack, which lasted about 16 days. It was followed by suppurative phlebitis of internal saphena vein. Cured.
5. Male, æt. 77. Attack developed 24 days after sequestrotomy of tibia, and the day after incision into a sinus, leading to bare bone near wound. Lasted 9 days. Cured.
6. Male, æt. 54. Admitted for comminuted fracture of tibia and fibula. The skin over seat of fracture sloughed; there was necrosis of the tibia. First attack 9 days after admission, lasting for more than a month. Second attack 3 months later, which lasted 14 days. Cured.
7. Male, æt. 3. Came on 4 days after wound of leg, in which tendo Achillis was divided. Duration of attack 5 days. Cured.
8. Female, æt. 25. Developed 9 days after excision of adenoma of right breast, whilst antiseptic dressing was still employed. Lasted 6 days, followed by an abscess of the breast, and a second attack 2 days after this was opened. This attack also lasted 6 days. Cured.
9. Male, æt. 32. Developed 14 days after admission with sinuses in axilla leading to caseous glands. Lasted about 5 days. Cured.
10. Male, æt. 40. (See erysipelas admitted as such, fatal case.) Admitted with cellulocutaneous erysipelas and large slough from ankle to thigh. Attack 41 days after admission. Lasted 17 days. Patient recovered from this, but ultimately died from septicæmia after amputation.
11. Female, æt. 28. Nurse. 5th attack. Lasted 6 days. Cured.
12. Male, æt. 48. Excision of knee; sinuses still remaining after operation, which took place 7 months before. Attack lasted 3 days. Cured.

13. Female, æt. 50. Admitted for erysipelas. The 2nd attack arose whilst patient was in the erysipelas ward, and was more severe than the first, lasting over 14 days. Cured.

14. Male, æt. 17. Developed 30 days after amputation of leg for compound fracture of tibia and fibula. Attack lasted 8 days. Cured.

15. Male, æt. 67. 2 days after severe scalp wound exposing the bone. Lasted 3 days, followed by sloughing. Cured.

16. Male, æt. 17. Admitted with a sort of gangrenous stomatitis, 2 days afterwards erysipelas appeared; patient lived 9 days longer, dying from pyæmia.

17. Male, æt. 33. 6 days after incisions to connect sinuses in a case of chronic hip disease. Lasted 10 days. Cured.

18. Male, æt. 1½. 4 days after incision for abscess following acute periostitis of tibia. Lasted 10 days. Relieved.

19. Male, æt. 11. 16 days after removal of a sequestrum from tibia following acute periostitis. Lasted 8 days. Cured.

20. Male, æt. 29. 3 days after removal of portion of cheloid growth from abdominal wall. Lasted 6 days. 20 days later he had an attack of phlebitis of left femoral vein. The cheloid much improved after the attack of erysipelas. Cured.

21. Male, æt. 62. 6 days after operation for epithelioma of superior maxilla and cheek. Lasted 3 weeks; patient died from exhaustion. No P. M.

22. Male, æt. 17. The day before the attack a sinus remaining after Syme's amputation for crushed foot was opened up. The attack lasted 8—9 days. Cured.

23. Male, æt. 56. The attack developed in the right thigh, patient suffering from simple fracture of femur on that side, without abrasion of skin. Attack lasted for some days, but exact duration not stated. Cured.

24. Male, æt. 36. Fourteen days after admission with extensive contused scalp wound; the wound nearly healed. Attack lasted 6 days. Cured.

25. Male, æt. 37. Very feeble man; admitted with cellulitis of arm; first attack developed 6 days after admission, and lasted 12 days; was followed by a slight attack of pneumonia; 15 days later second attack, which lasted 10 days; patient lived 13 days longer, dying from exhaustion, his condition being that of the typhoid state. No P.M.

26. Female, æt. 6. Admitted for sinus over hip, remaining after excision of head of femur; attack came on 19 days after admission, slight, lasting only two or three days. Relieved.

27. Female, æt. 73. Attack came on 32 days after operation for strangulated hernia; it did not affect wound, but eruption appeared about vulva. She lived 4 days after commencement of the attack. P.M.—Contracted granular kidneys.

28. Male, æt. 48. Commenced 10 days after operation for fistula in ano. Attack lasted about 26 days. Cured.

29. Female, æt. 49. Eruption appeared over both knees a month after amputation of the breast for scirrhus, and when the patient was suffering from an attack of pleuro-pneumonia. Attack lasted 11 days. Cured.

30. Male, æt. 52. Appeared 10 days after removal of epithelioma of superior maxilla. Lasted 13 days. Cured.

31. Male, æt. 6. Sinuses remaining after excision of hip. The attack developed about 3 weeks after admission. Lasted 11 days. Cured.

32. Male, æt. 17. Suffering from necrosis of rib, the sinuses leading to which were being dilated with laminaria tent. Attack developed 30 days after admission. Lasted 18 days. During that time pleurisy with effusion developed, also some symptoms of peritonitis, then signs of pneumonia, and patient died from exhaustion 9 days after disappearance of eruption. No P. M.

33. Female, æt. 35. Erysipelas of face appeared 9 days after dilatation of stricture of rectum. Lasted 13 days. Cured.

34. Male, æt. 17. Suffering from lupus of face. Attack came on 20 days after admission. Lasted a few days. Mild. The lupus improved. Cured.

35. Male, æt. 51. Attack came on 12 days after admission for sinus communicating with disease of pelvis. Lasted 10 days. Lived 8 days longer. Exhaustion and probably renal disease. No P. M.

36. Female, æt. 28. Nurse, 2nd attack, developed whilst on duty in ward. The face only affected; no wound. Lasted 6 days. Cured.

37. Female, æt. 47. Attack developed 20 days after removal of a large recurrent sarcoma, involving left mammary region and extending into the axilla. Duration of attack 13 days. Cured.

38. Female, æt. 58. Attack developed 3 weeks after removal of the left breast for sarcoma. Lasted 5 days. Slight. Cured.

39. Female, æt. 54. Sarcoma involving lower jaw on right side, removed with the bone involved. This was followed by sloughing of edge of flap, and erysipelas 2 days after operation. She lived 5 days after appearance of eruption.

OPHTHALMIC REPORT.

STATISTICAL REPORT

OF

THE OPHTHALMIC DEPARTMENT

FOR THE YEAR 1882.

By J. B. LAWFORD,
LATE OPHTHALMIC CLINICAL ASSISTANT.

DURING the year there were 2772 new patients (exclusive of renewed letters). 271 in-patients were admitted, and 252 major operations performed.

Analysis of In-patients.

Phlyctenular conjunctivitis	1	Cataract, soft	6
Mucopurulent ophthalmia	2	„ lamellar	3
Purulent ophthalmia	4	„ congenital	1
Granular lids	8	„ traumatic	7
Ulcers and opacities of cornea	24	Membrane after extraction of	
Anterior staphyloma	2	cataract	11
Hyphæma	1	Glaucoma, acute	3
Keratitis, heredito-syphilitic	12	„ chronic	7
„ punctata	1	„ absolute	2
Kerato-iritis	2	„ secondary	5
Iris, epithelial tumour of	1	Choroiditis, disseminata (syphilitic)	2
Iritis, syphilitic	5	Choroido-retinitis, syphilitic	3
„ rheumatic (recurrent)	3	„ heredito-syphilitic	1
„ unclassified	6	Choroiditis, unclassified	2
Irido-cyclitis, heredito-gouty	1	Rupture of choroid	1
Episcleritis	2	Sarcoma of choroid	2
Cataract, senile	25	Optic neuritis, syphilitic	3

Optic neuritis, syphilis unproved .	1	Wound of eyeball (complicated) .	14
Atrophy of optic nerve (post-papillitic)	3	„ of sclerotic only . . .	1
Amblyopia, tobacco	3	„ of cornea only . . .	2
„ hysterical	2	„ „ and sclerotic . . .	1
Retinitis, syphilitic	2	Burn of eye	1
„ hæmorrhagic	1	Wound of eyelids	1
„ pigmentosa	1	Deformity after burn, &c. .	2
Detachment of retina	3	Trichiasis	3
Panophthalmitis	3	Ectropion	3
Hypermetropia	2	Entropion	1
Myopia	2	Mucocele	4
Strabismus, convergent (not paralytic)	5	Lacrimonal abscess	4
Strabismus, divergent (not paralytic)	4	Abscess of lacrimonal gland .	1
Paralysis of ocular muscles . .	2	Orbital cellulitis	1
Miner's nystagmus	1	„ tumour	1
Mydriasis, uni-ocular, after injury	1	Rodent ulcer	1
Lost eyes	10	Dermoid cyst	1
		Readmissions	24
			—
			271

*Operations performed during 1882.**(The figures refer to the number of eyes.)*

Removal of cataract—51:	
„ by extraction	43
„ by suction operation	8
Discission after extraction	14
Iridotomy	8
Iridectomy—43:	
„ for acute glaucoma	3
„ for chronic „	3
„ for absolute „	1
„ for secondary „	10
„ for iritis	4
„ after extraction of cataract	3
„ for other cases of artificial pupil	19
Sclerotomy	17
Puncture of sclerotic for detachment of retina	2
Division of anterior synechia	2
Tenotomy of internal rectus—35:	
„ By Liebreich's method	26
„ Critchett's „	9

Tenotomy of external rectus—14:		
By Liebreich's method		11
„ Critchett's „		3
Advancement of internal rectus		4
„ of external „		1
Peritomy		7
Enucleation		33
Operation for shortening palpebral fissure		5
„ for entropion and trichiasis		8
„ for ectropion		4
Removal of melanotic growth beneath conjunctiva		1
„ dermoid cyst		1
„ orbital tumour		1
„ rodent ulcer		1

Many minor operations performed in the out-patient room (for lacrimal abscess and stricture, Meibomian cysts, spasmodic entropion, &c.) are not recorded.

Analysis of Operations for Cataract.

TABLE I.—Extractions of hard cataract—27.

Of the cases in this table the section was made upwards in all, except No. 3, in which it was made downwards, in order to avoid a conjunctival or sub-conjunctival nævus at the upper edge of the cornea. Iridectomy was performed at the time of operation in every case, except No. 1, in which an iridectomy had been previously made elsewhere. In the greater number of the cases (see Tables) the pupil was contracted, previous to operation, by eserine, and this myotic was also used four times in the forty-eight hours following the operation.

In Nos. 2, 3, 8, 15, 20, 21, 22, 23, 24, 25, 26, the pupil was dilated by atropine before the operation. In No. 1 no myotic or mydriatic was used previous to operation, and in No. 13 no eserine was used after the operation.

In all the cases, except Nos. 1, 2, 3, 15, 25, 26, atropine was commenced on the third day after the operation. In the six above-mentioned cases it was begun on the day of operation. In all it was used twice daily for a week or ten days, or more frequently if iritis set in.

The dressing, in all cases, consisted of a piece of dry linen

and a pad of absorbent cotton wool, kept in position by a flannel or soft linen bandage.

TABLE II.—Removal of soft cataract by extraction, linear extraction, and suction—24.

In these cases the pupil was dilated by atropine previous to operation.

All the cases in which suction was employed, and most of the “linear extraction” cases, were treated after the operation by the constant application of cold by means of lint wetted with ice-cold water and frequently changed. Those cases in which ordinary extraction was performed were treated by a dry compress and bandage, as the cases in the former table. In all, atropine was used frequently.

The “mixture” referred to in the column for anæsthetics in the accompanying tables was one consisting of alcohol 1 part, chloroform 2 parts, ether 3 parts, by volume, and was used only long enough to produce anæsthesia, which was then kept up by the administration of ether.

TABLE I.—*Extractions of Hard Cataract*—27.

No.	Name. Date.	Sex.	Age.	Anæsthetic.	Vomiting.	Operation.	Progress of case.	Secondary operation.	Result.
1	S. A. T. Jan. 27th	F.	53	None	—	Extraction of right upwards through coloboma of iridectomy done elsewhere; posterior synechiæ; lens small, and containing calcareous particles; T— before operation	Some iritis, and haze of cornea; thin membrane in pupil, which is slightly drawn up; T—	—	6 months after extraction V = 16 J; 12 months after extraction V = p.l. T—3.
2	M. A. L. Feb. 7th	F.	34	Ether	Vomiting (severe) for 2 hours after operation	Extraction of right upwards with iridectomy; much soft matter left in pupil; free escape of watery vitreous; atropine before operation	Severe plastic iritis; pupil blocked; T +	Iridectomy 3 mos. later; removal of memb. in p. 4½ mos. after extraction	10 mos. after operation eye quite blind, shrunken; left eye had been lost after extract. of cataract several years before. 3 months after extraction V = $\frac{20}{70}$ and words of 6 J; choroid at y. s. thin and patchy.
3	S. S. Feb. 16th	F.	65	Ether then chloroform	None	Extraction of left downwards with iridectomy; lens removed in capsule with Snellen's loop; lens large; slight escape of vitreous; atropine before operation	Favorable; thin membrane in pupil	—	6 months after extraction V = $\frac{20}{70}$ and words of 6 J; choroid at y. s. thin and patchy.
4	C. G. Feb. 24th	M.	68	Chloroform	No note	Extraction of right upwards with iridectomy; cortex fluid; nucleus hard and brown; eserine before operation	Favorable; thin membrane in pupil	Needed 5 mos. after extraction	6 months after extraction V = $\frac{20}{70}$ and 1 J.
5	W. L. Mar. 3rd	M.	51	None	—	Extraction of right upwards with iridectomy; free escape of watery vitreous; lens removed by scoop; eserine before operation	Severe iritis	—	3½ months after extraction V = $\frac{20}{40}$ partly and 1 J.

No.	Name. Date.	Sex.	Age.	Anesthetic.	Vomiting.	Operation.	Progress of case.	Secondary operation.	Result.
6	A. S. Mar. 23rd	F.	58	None	—	Extraction of left upwards with iridectomy; large, hard nucleus; cortex semi-fluid; eserine before operation	Favorable; membrane in pupil	Needled 5 weeks after extraction	7 weeks after extraction $V = \frac{20}{70}$ and 6 J.
7	M. A. A. Mar. 30th	F.	71	Chloroform	Vomiting while on the table and after return to the ward	Extraction of left upwards with iridectomy; small hard nucleus; pasty cortex; eserine before operation	Severe iritis; thick membrane in pupil; T +	Iridectomy downwards 6 weeks after extraction; removal of memb. from p.	6 months after extraction $V = \frac{20}{60}$ and 16 J.; central choroidal disease
8	E. T. May 5th	F.	35	Ether	None	Extraction of right upwards with iridectomy; lens rather soft; some left in pupil; atropine before operation	Favorable; thin capsule in pupil	— 2 weeks later	2 months after extraction $V = \frac{20}{70}$ and 14 J. badly.
9	E. B. May 19th	F.	62	None	—	Extraction of left upwards with iridectomy; lens small, easily removed; some opaque matter left in pupil; eserine before operation	Favorable	—	3 weeks after extraction $V = \frac{20}{100}$ and 1 J.
10	M. H. June 9th	M.	64	None	—	Extraction of left upwards with iridectomy; nucleus removed with Snellen's loop; much soft cortex left; moderate escape of vitreous, which was too fluid; eserine before operation	Iritis, and atropine irritation	3 weeks after extraction some of lens matter removed	3 months after extraction $V = \frac{20}{40}$ partly and 1 J.
11	S. S. June 13th	F.	54	None	—	Extraction of right upwards with iridectomy; hard, brown nucleus; soft cortex; eserine before operation	Slight iritis	—	3 weeks after extraction $V = \frac{20}{40}$ and 1 J.
12	J. D. June 23rd	M.	60	Ether then chloroform	None	Extraction of right upwards with iridectomy; nucleus hard; cortex pasty, some left near wound; eserine before operation	Slight iritis	—	4 weeks after extraction $V = \frac{20}{70}$ partly and 2 J.

13	D. E. June 30th	M.	73	Chloro- form	Coughing while on the table, no vomiting	Extraction of left upwards with iridec- tomy; conjunct. flap; free bleeding into a. c.; lens removed with Snel- len's loop; moderate escape of vitreous; eserine before operation	Severe iritis; patient very restless; pig- mented, thin mem- brane in pupil	Needed 5 months after extraction	6 months after ex- traction V = $\frac{20}{100}$ and 1 J. badly.
14	S. A. S. July 21st	F.	72	"	None	Extraction of left upwards with iridec- tomy; large conjunct. flap and free bleeding into a. c.; lens pasty; came out whole; eserine before operation	Acute iritis; yel- lowness of wound; pupil drawn up and blocked by dense yellow membrane	—	Requires secondary operation.
15	J. L. Aug. 25th	M.	78	Ether then chloroform	None	Extraction of right upwards with iridectomy; much soft matter left behind; atropine before operation	Slight iritis; much soft matter in pupil	Iridotomy 3 mos. after extraction	6 months after ex- traction V = $\frac{20}{100}$ and 16 J. badly; central choroidal changes.
16	E. M. Sept. 14th	M.	60	None	—	Extraction of left upwards with iridectomy; lens loose, small, and hard; pupil left black; eserine be- fore operation	Favorable; thin mem- brane in pupil	Needed 2 mos. after extraction	Good result; pa- tient cannot read; "can see" 1 J.
17	E. M. Sept. 29th (same as Case 16)	M.	60	None	—	Extraction of right upwards with iridectomy; cortex like gruel; nu- cleus hard; eserine before operation	Favorable; thin mem- brane in pupil	6 weeks after extraction mem- brane cut with irido- tomy shears	Good result; pa- tient thinks it the better eye.
18	A. D. Oct. 6th	M.	63	Chloro- form	No note	Extraction of left upwards with iridec- tomy; conjunct. flap at outer end; lens pasty; eserine before opera- tion	Severe iritis; increase of T.; patient very troublesome	3 weeks after extraction in- cision as for sclerotomy	Unknown; patient discharged for drunkenness
19	E. S. Oct. 10th	F.	67	None	—	Extraction of right upwards with iridectomy; eserine before opera- tion	Favorable	—	2½ months after ex- traction V = $\frac{20}{100}$ barely and 6 J.; astig. 2 D.

No.	Name. Date.	Sex.	Age.	Anæsthetic.	Vomiting.	Operation.	Progress of case.	Secondary operation.	Result.
20	C. B. Nov. 3rd. Operation by Mr. Lawford	F.	63	Chloro- form	None	Extraction of right upwards with iridectomy; lens small, hard, dark brown; atropine before operation	Gray, woolly membrane formed in pupil, stretching downwards and backwards from wound	—	Excision 5 months after extraction; eye painful; no p. l.; T.
21	E. A. D. Nov. 10th	F.	72	None	—	Extraction of left upwards with iridectomy; lens hard, amber, came out clean; atropine before operation	Slight iritis; thin membrane in pupil	—	7 weeks after extraction $V = \frac{20}{100}$ and letters of 4 J.
22	F. F. Nov. 14th	F.	56	None	—	Extraction of right upwards with iridectomy; lens removed in capsule; loss of healthy vitreous; atropine before operation	Favorable	—	1 month after extraction $V = \frac{20}{60}$ and 4 J.
23	E. H. Dec. 1st	M.	80	None	—	Extraction of left upwards with iridectomy; lens small, did not come out quite clean; atropine before operation	Favorable; some opaque matter in pupil	—	Very good result; patient not seen again.
24	S. G. Dec. 1st	F.	76	None	—	Extraction of right upwards with iridectomy; lens hard, large; moved freely under cystotome; atropine before operation	Favorable	—	2 months after extraction $V = \frac{20}{70}$ and words of 1 J.; astig. 2 D.
25	D. E. Dec. 15th (same as Case 13)	M.	73	Chloro- form	Coughing while on the table	Extraction of right upwards with iridectomy; some bleeding into a. c.; atropine before operation	Iritis; very restless	—	4 weeks after extraction $V = \frac{20}{70}$ and 6 J. badly.
26	M. M. Dec. 15th	F.	58	None	—	Extraction of left upwards with iridectomy; conjunct. flap; free bleeding into a. c.; lens small and hard; some soft matter left in pupil; atropine before operation	Moderate iritis	2 weeks after extraction membrane cut with scissors	7 weeks after extraction $V = \frac{20}{60}$ and 12 J.
27	E. O. Dec. 29th	F.	72	None	—	Extraction of left upwards with iridectomy; small, hard nucleus; soft cortex; eserine before operation	Favorable	—	3 weeks after extraction $V = \frac{20}{60}$ partly and 1 J.

TABLE II.—*Removal of Soft Cataract by Extracapsular and Suction (including Traumatic Cataracts)*—24.

28	C. M. Jan. 20th	M. 18	Ether	Vomiting after return to ward	Right lens removed by suction; needed 6 days and 2 days previously; lamellar cataract	Favorable	—	3 months after operation V = $\frac{2.0}{3.0}$ Patient never returned to hospital after leaving the ward.
29	W. B. Feb. 7th	M. 72	None	—	Extraction of left downwards through coloboma of former iridectomy; nucleus and most of cortex extruded by manipulation; traumatic cataract	Favorable	—	2 months after operation V = $\frac{2.0}{3.0}$ partly and 1 J.
30	C. M. Feb. 28th (same as Case 28)	M. 18	Ether	Much vomiting after operation	Left lens removed by suction; needed 4 days previously	Favorable	—	3 weeks after operation V = $\frac{2.0}{3.0}$ partly and 4 J.; is a poor scholar.
31	P. M. Mar. 3rd	M. 28	"	None	Left lens removed by suction; needed 3 days previously	Favorable	—	Good result; pupil clear; too young to test sight.
32	J. J. Mar. 31st	M. 6	"	None	Left lens removed by suction; needed 3 days previously; traumatic cataract	Favorable; much opaque matter in pupil	Membrane in pupil removed by canula for- ceps 3 months later	Good result; too young to test sight.
33	G. H. S. April 28th	M. 6	"	None	Left lens removed by suction; some lens matter left in pupil; traumatic cataract	Favorable	—	Pupil drawn up; result negative.
34	J. W. May 5th	M. 17	Ether then chloroform	Slight vomiting after operation	Right eye; linear extraction upwards; no iridectomy; remains of old traumatic cataract removed by iris forceps; slight escape of vitreous	Eye remained irritable for many weeks	—	6 months after extraction eye quiet, pupil clear; V not taken.
35	H. L. May 17th	M. 15	Ether	No note	Right eye; linear extraction; no iridectomy; lens matter not all removed; traumatic cataract	Iritis; much opaque matter in pupil; anterior synechia	Synechia divided 3 wks. after extraction	Good result; patient gets on very well; too young to test sight.
36	W. D. May 19th	M. 6	None	—	Right eye; linear extraction downward; without iridectomy; lens matter not all removed; needed 1 week previously; lamellar cataract	Favorable	—	

Case No.	Name. Date.	Sex.	Age.	Anesthetic.	Vomiting.	Operation.	Progress of case.	Secondary operation.	Result.
37	E. P. May 26th	F.	7	None	—	Left eye; linear extraction down-in; no iridectomy; pupil left gray; needed 1 week previously; lamellar cataract	Favorable	—	Good result; pupil clear; child does not know the letters.
38	E. P. May 26th (sister of No. 37)	F.	13	None	—	Left eye; linear extraction down-in; no iridectomy; pupil left gray; needed 1 week previously; lamellar cataract	Favorable	—	2 mos. after extraction $V = \frac{20}{10}$ and 10 J; child barely knows the letters.
39	A. D. May 30th	M.	11	Ether	No note	Left eye; lens removed by suction; a small escape of vitreous; some opaque matter left in pupil; traumatic cataract	Iritis, with formation of lymph, which became adherent to the wound of incision	—	4 months after operation $V = \frac{20}{20}$ partly.
40	J. J. May 30th	M.	11	"	None	Left eye; linear extraction of shrunken congenital cataract, removed by sharp hook; no iridectomy	Favorable	—	2 weeks after extraction $V = \frac{10}{20}$ and words of 14 J.
41	J. J. June 9th (same as Case 40)	M.	11	"	None	Right eye; operation as on left eye; small escape of vitreous	Favorable	—	1 week after extraction $V = \frac{10}{20}$ and 16 J. (spelt).
42	P. M. July 13th (same as Case 31)	M.	28	None	—	Right eye; linear extraction; no iridectomy; lens needed 2 days previously	Severe iritis; membrane in pupil	Needed 2 mos. after extraction, increased T. followed; iridectomy 1 week later; another iridectomy 3 weeks after first	Still under treatment.
43	A. D. July 14th	M.	8	Ether	Severe vomiting for some hours afterwards	Right lens removed by suction; traumatic cataract	Favorable	—	Good result; patient not seen after leaving the ward

44	H. Y. Aug. 29th	M. 31	None	—	Left eye; extraction upwards with iridectomy; small pasty lens; came out clear	Iritis; some capsule in pupil, which became adherent to wound	—	2½ months after extraction V = $\frac{20}{20}$ and 1 J
45	H. P. Oct. 3rd (same as Case 44). Operation by Mr. Lawford	M. 31	None	—	Right eye; extraction upwards with iridectomy; lens small and pasty, as in left eye	Slight iritis; capsule in pupil stretching to wound	3 weeks after extraction membrane cut with iridectomy shears	2 months after extraction V = $\frac{20}{40}$ and 10 J.
46	J. Le F. Oct. 24th	M. 24	Mixture then ether	Much coughing and vomiting while on the table and after return to the ward	Removal of left lens by suction; a good deal of opaque matter left in pupil	Severe iritis; membrane in pupil, but central part clear	8 months after extraction membrane in pupil cut with shears and removed with iris forceps	Fair result; V not tried
47	H. E. Nov. 3rd	M. 33	None	—	Left eye; linear extraction upwards; no iridectomy; some opaque matter left in pupil; needed 3 days previously	Favorable; narrow band of capsule across pupil	3 weeks after extraction band across pupil divided	4 weeks after extraction V = $\frac{20}{70}$ and 1 J.
48	M. K. Dec. 8th	M. 19	Mixture then ether	Severe vomiting	Right eye; tough shrunken cataract removed by canula forceps through upward linear incision; no iridectomy	Favorable	—	2 weeks after extraction V = $\frac{20}{20}$ and letters of 6 J.
49	M. K. Dec. 8th (same as Case 48, and done at same sitting)	M. 19	"	"	Left eye; friable shrunken cataract broken up by needle, leaving clear central space in pupil	Favorable	—	2 weeks after needling V = $\frac{20}{100}$ and letters of 10 J.
50	C. R. Dec. 8th	F. 6	Ether	Vomiting some hours afterwards	Right eye; shrunken cataract removed by canula forceps through linear incision; no iridectomy	Favorable	—	Central part of pupil clear; too young to test sight.
51	F. W. Dec. 18th	F. 9	"	None	Left eye; linear extraction; needed 3 days previously; no iridectomy; lamellar cataract	Favorable	—	Good result; child imbecile; impossible to test sight.

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GENERAL INDEX

TO

ST. THOMAS'S HOSPITAL REPORTS,

VOLS. I-XII.

IN presenting this Index of the 'Reports' I trust that a means has been supplied for rendering the 'Reports' of more value to the subscribers and to the profession. For assistance in the earlier part of this work I am indebted to my old friend Dr. H. K. Hitchcock, of Bournemouth.

W. W. WAGSTAFFE.

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St. Thomas's Hospital MEDICAL SCHOOL.

CALENDAR AND PROSPECTUS

FOR THE
YEAR COMMENCING OCTOBER 1st, 1883.



1883 & 1884

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Full information on all matters connected with the Medical School, Prizes, &c., will be obtained on application to the Secretary, at the Hospital, Albert Embankment, S.E.

A Register of Lodgings suitable for Students has been recently revised, and is kept in the Secretary's Office. Information as to terms, accommodation, &c., can be obtained on application. This Register has been especially prepared, with a view to the convenience of gentlemen newly arriving in town, without definite arrangements having been made for their accommodation in lodgings or otherwise.

Several Medical Practitioners and Private Families residing in the neighbourhood receive Students for residence and supervision.

There is a Restaurant in the Medical School where Students can take their meals at moderate charges.

St. Thomas's Hospital

MEDICAL SCHOOL.

The WINTER SESSION 1883 - 84 will commence on MONDAY, OCTOBER 1st, and terminate on MARCH 31st.

The SUMMER SESSION will begin on MAY 1st, and terminate on JULY 31st.

An Introductory Address will be given by Mr. LE GROS CLARK, F.R.S., in one of the Theatres of the Hospital on Monday, October 1st, at 3 P.M., after which the various Departments of the Hospital and School will be thrown open in working order for the inspection of Visitors.

Refreshments will be provided in the Library.

The Annual dinner, in which all former and present Students are invited to join, will take place the same evening in the Governors' Hall, at 6 for 6.30.

The Annual Distribution of Prizes will be made during the Summer Session.

ALL accounts agree in attributing the origin of St. Thomas's Hospital to circumstances more or less accidental. In Stow's "Survey of London," we find "that a fire happened in the Borough of Southwark in the year 1207, which destroying the Priory of St. Mary Overie, the Canons erected an Hospital hard by for the celebration of divine service, till their Monastery could be rebuilt; which they, soon after, accomplishing, Peter de Rupibus, or de la Roche, Bishop of Winchester, for the greater convenience of air and water, removed the said Hospital in the year 1215, and erected it in a place where Richard, Prior of Bermondsey, but two years before had built an Almonry or Almshouse for the reception of indigent children and necessitous Proselytes, and

having dedicated the same to St. Thomas the Apostle, endowed it with land to the amount of three hundred and forty-three pounds per annum."

It is difficult to say whether it is owing to deficiency of historical accuracy in Maitland (from whom the above is quoted), or to excess of orthodoxy, that he names St. Thomas *the Apostle*. Certain it is, however, that Peter de la Roche denominated its foundation "The Spital of St. Thomas the Martyr of Canterbury," in honour of Thomas à Becket whose shrine in Canterbury Cathedral was already drawing what Chaucer aptly terms "shoals" of pilgrims down the "Old Kent Road," and past the very door of the Hospital to the Tabard Inn.

The next fact of importance seems to be the cession of the Hospital by the Prior of Bermondsey to a President, Master and Brethren, in 1482; unless we note an altercation in 1252 between the then Archbishop of Canterbury and the Bishop of Winchester for the patronage of it. This ended in favour of the latter, whose palace hard by survives in name, and partly in structure to the present day, as Winchester House. From an estimate formed about the later of these dates, it appears there were a master and brethren, and three lay-sisters, residing in the Hospital; forty beds were made up for poor, infirm and impotent people, all of whom had victuals and firing allowed to them.

From this time, Golding truly says, nothing of importance occurred either in the government or revenues of St. Thomas's Hospital until the 26th year of Henry VIII., when an estimate was formed of the latter, which were found to amount to the annual sum of £347. 3s. 6d. It is not to be wondered at that we have so little to record during these early times; for the "Hospitium" dependent on the rich Abbey of Bermondsey was, as the name strictly implies, more an Almshouse than a Hospital. No doubt the sick found their way into it with other distressed persons; and no doubt some learned monk, using the shelter and leisure of the cloister for researches in alchemy and medicine, was told off to minister to their

physical necessities. The brotherhood of the Rosy Cross, to which Gower, now lying in the neighbouring church, belonged, was intimately connected with the early quest after Arcana and Elixirs of Life which represented the science of the time.

In the year 1535, Henry VIII. was excommunicated by Pope Paul III., and, declaring himself head of the church, proceeded to dissolve the Catholic houses, whose large revenues went to the Crown. There seem to have been 645 monasteries and abbeys thus treated, twenty-eight of which had abbots with seats in Parliament, ninety colleges and free chapels, and 110 hospitals of various descriptions. It is certainly in favour of the sweeping change that so able and honest a man as Sir Richard Gresham, the Lord Mayor of London, should have put his hand to the following petition to the King:

“Most redowted, puyasant, and noble Prince * * * *—nere and within the cytie of London be iij hospitalls or spytells commonly called Seynt Georges Spytell, Seynt Barthilmews Spytell, and Seynt Thomas Spytell, and the new Abbey of Tower Hill, founded of good devotion by auncient fathers, and endowed with great possessions and rents only for the reliefe, comforte, and helping of the poore and impotent people lying in every street, offending every clene persone passing by the way with theyre fylthy and nasty savors. Wherefore may it please your merciful goodness, enclyned to pytie and compassion, for the reliefe of Xts very images, created to his own similitude, to order by your high authoritie, as supreme head of this Church of England, or otherwise by your sage discretion, that your mayer of your cytie of London, and his brethren the aldermen for the time being, shall and may from henceforth have the order, disposition, rule and governance both of all the lands, tenements, and revenues apperteynyng and belongyn to the said Hospitals, governors of them, and of the ministers which be or shall be withyn any of them, and then your grace shall facillie perceyve that where now a small number of Chanons, Priests, and Monkes be founde for theyr own profit only, and not for the common

utilitie of the realme, a great number of poore, needy, syke and indugent persones shall be refreshed, maynteyned, and comforted ; and also healed and cured of their infermities frankly and freely by physicions, surgeons and potycaries, which shall have stipende and salarie only for that purpose ; so that all impotent persones not able to labour shall be releved, and all sturdy beggars not willing to labour shall be punished."

St. Thomas's Hospital being claimed by the King as Church property, was surrendered to him by Nicholas Buckland, the then master, on the 15th July, 1538. It was called St. Thomas à Becket's Spittil. Its yearly revenue was estimated at £266. 17s. 6d., and an annual pension of 5s. 8d. was payable by the master, and another of 2s. 1d. by the curate, to the Archdeacon of Surrey. Soon after the seizure, we find that the Citizens of London purchased of the Crown some of its landed estates, producing about £160 yearly. The want of the hospital thus destroyed was felt immediately. Wounded soldiers from the army in France, and the sick poor in general were without provision or help, and Henry proposed granting to the City the Mansion house of St Bartholomew's, the dissolved house of Grey Friars adjoining, and the unoccupied fabric of St. Thomas's Hospital. The latter was intended by Henry to receive the name of the Hospital of the Holy Trinity, and to be allotted exclusively to lame, wounded, and diseased soldiers. The monastery of Grey Friars was to be for the education and maintenance of fatherless children and those of poor parents. The intentions of Henry were overtaken by death, but not before he had conferred upon the Citizens of London the Hospital of St Bartholomew's and also that of Bethlem for lunatics.

It is from the death of Henry that the connection of St. Thomas's Hospital with the city of London appears to begin. To meet the needs of the sick and destitute who had before depended on the charity of the religious houses, a Committee or Board of Inquiry was instituted by the Citizens, with the sanction of King Edward. About 2,100 souls were reported as fit recipients of relief, as fatherless children and invalids

or as "Idle rogues of both sexes who were levying contributions on public sympathy by feigned tales of sorrow." It was proposed to establish receptacles for each class in the unoccupied monastic buildings, and a pecuniary contribution was set on foot to complete the work. They bought the dissolved house of the Franciscans or Grey Friars near St. Bartholomew's Hospital, and also by charter from the King received a grant as follows: "That the said mayor, commonalty, and citizens, and their successors, may have and enjoy all the franchises, immunities, and privileges whatever, which any Archbishop of Canterbury, and which the said Charles late Duke of Suffolk, or any master, brethren, or sisters of the late Hospital of St. Thomas in Southwark aforesaid; or any Abbot of the said monastery of St. Saviour, Saint Mary Bermondsey, next Southwark aforesaid, or any prior and convent of the priory of St. Mary Overie, ever had or enjoyed, or which we hold or enjoy, or our most dear father Henry the VIIIth, late King of England, or had enjoyed, or ought to have, hold, and enjoy the same: and that none of our heirs or successors may intermeddle with this our grant."

The Greyfriars became Christ's Hospital, and the Southwark site the Hospital of the Holy Trinity or St. Thomas's. The Lord Mayor and certain citizens then met on the 6th of October, 1552, and constituted themselves by royal permission governors of the hospitals, and almoners of the money collected. The Hospital of the Holy Trinity they named, in compliment to Edward, the "King's Hospital," and ordained it to receive 260 "wounded soldiers, blind, maimed, sick, and helpless objects."

They also directed that 380 children should be received into Christ's Hospital.

To complete the scheme, the old palace of Bridewell, in Blackfriars, where the Emperor Charles V. had lodged in 1522, when on a visit to Henry VIII., and where subsequently Wolsey had lived, was granted to the City by Edward as a house of correction for dissolute persons and idle apprentices, and for the temporary maintenance of distressed vagrants.

Lastly, the lands lately belonging to the Palace of the Savoy were conferred jointly on the three foundations; and a month only before the end of Edward's short reign, he incorporated by a second charter bearing date the 6th of June, 1553, the Lord Mayor and commonalty of the City of London in succession as perpetual governors of Saint Bartholomew's, Christ's, Bridewell, and the king's Hospital (which last received the name of ST. THOMAS THE APOSTLE), and secured to them the possession of all the estates and revenues appertaining to them by previous deeds of gift. So were the royal hospitals founded.

In 1557 the laws were framed and printed under the name of "The Order of the Hospitals of K. Henry the VIII. and K. Edward the VI., viz. St. Bartholomew's, Christ's, Bridewell, St. Thomas's. By the Maier, Cominaltie, and Citizens of London," &c.

Successive bequests and donations continued to augment the property of the charities, but during the reigns of Elizabeth, James I., Charles I., and the Protectorate, there appear few facts to note. In the abstract of the charter of confirmation granted to the City in 1663 by Charles II. on his restoration, we find the charter of Edward acknowledged and confirmed. The Great Fire of London in 1666 injured St. Thomas's in its revenues only; and a fire in Southwark anno 1676, ceased, "as if by divine interposition," at the Hospital, probably a strong and isolated block of building. Shortly after this, however, it was found necessary to rebuild the fabric, and in 1693 subscriptions were opened for this purpose. A long list of benefactions in this and the succeeding year, amounting in all to £37,769. 3s., is given by Golding, who especially singles out Sir Robert Clayton for eulogium. The statue then erected to him, and still extant, was originally dated 1701, but this was altered on his death to 1714. He was the founder of the old square in which it stood, replacing what Golding terms "a low swampy structure of the monastic order." In 1707, Mr. Guy, founder of the neighbouring hospital, erected three wards at his own

charge. In 1717, the back block of buildings adjoining Guy's Hospital was added. With the exception of the two large blocks forming the Borough frontage, the north wing erected in 1833, and the south wing in 1839, the fabric seems to have remained unchanged until its purchase by the railway. In the centre of the front quadrangle stood the brass statue of King Edward, by Scheemakers, erected first in 1737, in pursuance of the will of Charles Joye, some time treasurer of the Hospital. It now stands in the grounds of the New Hospital.

It is a matter of more difficulty to trace the early history of the medical school in connection with the hospital. For the facts which follow we are indebted to the late R. G. Whitfield, Esq., who, from the long period during which his family had been associated with this foundation, was perhaps more qualified to speak than any other person.

The earliest mention in the hospital books of an apprentice is on December 31st, 1561. It is not until 1702 that a law is met with precluding pupils or surgeons from dissecting the dead body without permission from the treasurer.

In 1703 the grand committee resolved that no surgeon should have more than three "Cubbs," a term altered in 1758 to that of "Dressers." Besides these there were also apprentices to the surgeons of the hospital, and ordinary pupils. The first mention of lectures occurs soon after the appointment of Wm. Cheselden, in 1718. These he at first gave at his own house, but afterwards by permission in the hospital. They were on anatomy and surgery. In 1723 a regular registry was ordered to be kept by the apothecary, of pupils entering to surgical practice. In 1725, Guy's Hospital was opened for the reception of patients. In 1751 the assistant-physician was allowed to take two pupils for his own benefit. In 1768, an additional surgeon, Mr. Joseph Else, was elected to read lectures to the pupils.

The students of Guy's Hospital had by courtesy been allowed to attend the operations, and a similar favour admitted the St. Thomas's men to those at Guy's. But on

the 8th November, 1768, it was formally resolved that the pupils of each hospital have the liberty of attending not only the operations, but surgical practice, and the money to be divided between the six surgeons and two apothecaries. Hence the appellation of the "United Hospital;" an amalgamation never extended beyond the surgical practice.

To Mr. Else is due the foundation of a regular anatomical school. Mr. Cline, who in 1781 was appointed to read lectures conjointly with Mr. Else, was mainly instrumental in bringing it to its greatest celebrity. At Mr. Else's death, Mr. Cline purchased the collection of preparations made by him and Mr. Girle, a former surgeon, which are now in the hospital museum, and became sole lecturer on anatomy. In 1788 he also became surgeon to the hospital. Mr., afterwards Sir Astley, Cooper was apprenticed to Mr. Cline in 1784, and before his election, as one of the surgeons to Guy's Hospital in 1800, was joint lecturer with his teacher on anatomy and surgery. They both added materially to the pathological museum.

In 1812 Mr. Henry Cline was elected surgeon to St. Thomas's Hospital on his father's resignation, and carried on the anatomical lectures conjointly with Astley Cooper. In 1813 a new anatomical theatre and museum were built, the hospital giving £3000 for the purpose, and the two lecturers £1000 each. In 1815 Mr. Benj. Travers, an apprentice of Astley Cooper's at Guy's, was elected surgeon, according to the established rule which gave the vacancy to the senior apprentice of either institution. Mr. Travers joined in the lectures, devoting his attention specially to ophthalmic surgery. In 1820 Mr. Joseph Henry Green was elected surgeon on the death of his cousin Mr. Hy. Cline, having been apprenticed to his uncle Mr. Cline in the year 1809. From 1820 to 1825 he lectured with Astley Cooper. At this period all the branches of medical study,—viz., medicine, chemistry, materia medica, midwifery, botany, and physiology—were lectured on at Guy's Hospital, and no physician of St. Thomas's was allowed to share them.

In 1824 Sir A. Cooper resigned the surgical chair, and Mr. C. Aston Key, his apprentice and nephew by marriage, joined Mr. Green in the office. Mr. Fred Tyrrell, standing in exactly the same relation to Cooper, received permission to lecture on diseases of the eye. In the following year Cooper showed signs of cerebral disturbance, and the family desired that his nephew, Mr. Bransby Cooper, should be his successor. But the claims of Mr. John Flint South were considered superior, and he was appointed. From this cause the "United Hospitals" were severed, and a complete school set up in both. The majority of the students clung to Guy's, where the prestige of the great Sir Astley was still strong; and St. Thomas's school began to sink. The establishment of the Aldersgate Street private school under Tyrrell and Lawrence materially aided in this declension, as did also the secession of Dr. Elliotson to the newly-established University College, and the foundation of a fresh school at King's College, where for a time the surgical lectures were given by Mr. Joseph Henry Green, although a surgeon of St. Thomas's.

Owing to the unprosperous state of affairs in 1842, the Governors came forward to reorganize the school, and the aid of Mr. R. D. Grainger, whose popularity had been established in the Webb Street private school, was obtained. Mr. Joseph H. Green also rejoined the school; and Dr. Marshall Hall, Dr. Hodgkin, Dr. Martin Barry, Dr. Gregory, and Mr. Benjamin Travers contributed to its efficiency. This state of affairs continued until 1858, when the Governors gave back the management, and its attendant risks, into the hands of the lecturers.

For some years it was maintained with difficulty, and at much self-sacrifice on the part of the staff, during what may be termed a transitional period, in the hope, now realized, of its once more developing into an institution worthy of its old traditionary glories.

From its foundation down to the year 1862, the Hospital occupied the original site near London Bridge, but in that year the property was sold for the extension of the railway

accommodation, and the establishment temporarily removed to the Surrey Gardens, where it was carried on till the Summer of 1871. In 1868 the first stone of the new Hospital at Westminster Bridge was laid by the Queen, and the completed building was opened by Her Majesty in 1871. In September the patients were first admitted into the new Hospital, and the Medical School was opened on October the 2nd.

The original Hospital latterly contained 500 beds. The present building contains in all 572 beds. It consists of six blocks appropriated to the reception of patients; with one for the administrative and other offices, and one for the Medical School. The Ward blocks, though connected by corridors, stand apart, so as to afford free exposure in all directions. The Wards, with the exception of four which are placed on the ground floor, occupy the first, second, and third floors. Generally, each Ward affords accommodation for 28 beds, which are placed against the piers between the windows, so as to secure thorough ventilation. In a small Ward annexed to each larger Ward, there are two beds for cases requiring special care or treatment.

Of the whole accommodation of the Hospital, about 180 beds are appropriated to ordinary Medical cases, and 230 to ordinary Surgical cases. There are also special Wards for the reception of diseases peculiar to women; for diseases of the eye; for venereal affections; and for children under six years of age. In one of the blocks, separated from the rest of the establishment, there are Wards for infectious diseases.

The space provided for each bed in the ordinary Wards is upwards of 1,800 cubic feet, and in the block appropriated to infectious diseases, about 2,500 cubic feet.

The Out-patients' Department is extensive and well arranged, and every facility is afforded for the treatment of different forms of Medical and Surgical casualties and diseases.

During the twelve months ending December 31st, 1881, the number of patients admitted into the Hospital amounted

to 4,060. In the same period, 20,037 Out-patients have been treated, and in the Maternity department 2,104 women have been attended at their own homes. Casualties, to the number of 54,817 attendances, were treated during the same period. 836 Children were successfully vaccinated at the Hospital as a Government Station.

The School buildings stand at the southern extremity of the Hospital, from which they are quite isolated. They contain ample accommodation for large classes of students.

The Museum is one of the most important in the metropolis. There is a large Reading Room and Library for the use of the pupils.

In addition to these are the various Lecture Rooms, the Dissecting Rooms, the Laboratories for Practical Physiology and for Practical Chemistry, and the Post-mortem Rooms.

The Committee of the "NIGHTINGALE FUND" have arrangements with the authorities of St. Thomas's for educating Women as Hospital Nurses. On the satisfactory completion of one year's training, they will be required to enter into service as Nurses in the Metropolitan or Provincial Hospitals or Infirmaries. A limited number of gentlewomen can be admitted under special agreements to this course of training, with a view to qualify themselves for superior appointments.

The Regulations as to the admission of Candidates may be obtained by writing to Henry Bonham Carter, Esq., the Secretary of the Nightingale Fund, 91, Gloucester Terrace, Hyde Park, London, W.

Institutions requiring trained Superintendents or Nurses are requested to apply to the Secretary of the Nightingale Fund, or to Mrs. W. W. Wardroper, the Matron of the Hospital, giving as long previous notice as possible of their requirements.

Women wishing to be trained should, whenever it is possible, make personal application to Mrs. Wardroper, to be entered on the list of Candidates, for admission as vacancies occur.

MEDICAL OFFICERS, LECTURERS, &c.,
OF
ST. THOMAS'S HOSPITAL
AND
MEDICAL SCHOOL.

CONSULTING PHYSICIANS.

T. A. BARKER, M.D. CANTAB. ET EDIN. .. 27, Wimpole Street, W.
Sir J. RISDON BENNETT, M.D. EDIN., F.R.S. 22, Cavendish Square, W.

CONSULTING SURGEONS.

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JOHN SIMON, Esq., C.B., F.R.S., D.C.L. 40, Kensington Square, W.

CONSULTING OPHTHALMIC SURGEON.

R. LIEBREICH, Esq. 29B, Albemarle St., W.

PHYSICIANS.

J. S. BRISTOWE, M.D. LOND., F.R.S. .. 11, Old Burlington Street, W.
W. H. STONE, M.A., M.B. OXON. .. 14, Dean's Yard, Westminster, S.W.
W. M. ORD, M.D. LOND. 7, Brook Street, W.
JOHN HARLEY, M.D. LOND. 39, Brook St., W.

OBSTETRIC PHYSICIAN.

H. GERVIS, M.D. LOND. 40, Harley Street, W.

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JOHN CROFT, Esq. 48, Brook St., Grosvenor Sq., W.
Sir WILLIAM MAC CORMAC, M.A., D.Sc. 13, Harley Street, W.
FRANCIS MASON, Esq. 5, Brook St., Grosvenor Sq., W.

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E. NETTLESHIP, Esq. 5, Wimpole Street, W.

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SEYMOUR J. SHARKEY, M.A., M.B. OXON. 77, Lambeth Palace Road, S.E.
GEORGE GULLIVER, M.A., M.B. OXON. 75, Lambeth Palace Road, S.E.

ASSISTANT OBSTETRIC PHYSICIAN.

R. CORY, M.A., M.D. CANTAB. 73, Lambeth Palace Road, S.E.

ASSISTANT PHYSICIAN FOR DISEASES OF THROAT.

F. SEMON, M.D., Berlin 59, Welbeck Street, W.

ASSISTANT SURGEONS.

A. O. MAC KELLAR, Esq., M. Ch. .. 22, George St., Hanover Sq., W.
H. H. CLUTTON, Esq., M.A., Cantab. 77, Lambeth Palace Road, S.E.
W. ANDERSON, Esq. 13, Welbeck Street, W.
B. PITTS, Esq., M.A., M.C. Cantab .. Lambeth Palace Road, S.E.

MEDICAL OFFICERS, &c.—*Continued.*

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ASSISTANT DENTAL SURGEON.

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RESIDENT ASSISTANT SURGEON.

G. H. MAKINS, Esq. St. Thomas's Hospital, S.E.

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WALTER TYRRELL, Esq. 95, Cromwell Road, S.W.

ELECTRICIAN.

W. J. KILNER, B.A., M.B., Cantab. .. 104, Ladbroke Grove Road, W.

APOTHECARY.

S. PLOWMAN, Esq. St. Thomas's Hospital, S.E.

DEMONSTRATORS OF MORBID ANATOMY.

S. J. SHARKEY, M.A., M.B. Oxon. .. 77, Lambeth Palace Road, S.E.

W. B. HADDEN, M.D., Lond. 21, Welbeck Street, W.

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ALBERT J. BERNAYS, Ph.D., F.C.S., F.I.C. Acre House, Brixton Rise, S.W.

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F.L.S. Park, N.W.

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Brixton, S.W.

R. W. REID, Esq., C.M. 75, Lambeth Palace Road, S.E.

CHARLES STEWART, Esq., F.L.S. .. 42, Sinclair Road, Addison Road,
W.

H. RAYNER, M.D. Hanwell, W.

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CURATOR OF THE MUSEUM.

C. STEWART, Esq., F.L.S.

LIBRARIAN.

E. H. DENISON, Esq.

SECRETARY TO SCHOOL.

DEAN OF THE SCHOOL.

W. M. ORD, M.D.

7, Brook Street, W.

LECTURES AND DEMONSTRATIONS.

<i>Medicine</i>	{ Dr. BRISTOWE. Dr. ORD. Dr. BRISTOWE.
<i>Clinical Medicine</i>	{ Dr. STONE. Dr. ORD. Dr. HARLEY.
<i>Do. Obstetric</i>	{ Dr. GERVIS.
<i>Surgery</i>	{ Mr. SYDNEY JONES. Sir WILLIAM MAC CORMAC. Mr. S. JONES.
<i>Clinical Surgery</i>	{ Mr. CROFT. Sir WILLIAM MAC CORMAC. Mr. MASON.
<i>Do. Special Course</i> ..	{ Mr. CROFT.
<i>Descriptive Anatomy</i>	{ Mr. REID. Mr. ANDERSON.
<i>General Anatomy and Physiology</i>	{ Dr. JOHN HARLEY. Mr. STEWART.
<i>Practical Physiology</i>	{ Dr. T. C. CHARLES.
<i>Ophthalmic Surgery</i>	{ Mr. NETTLESHIP.
<i>Chemistry and Practical Chemistry</i> ..	{ Dr. BERNAYS.
<i>Midwifery, and the Diseases of Women and Children</i>	{ Dr. GERVIS.
<i>Physics and Natural Philosophy</i> ..	{ Dr. STONE.
<i>Materia Medica, and Therapeutics</i> ..	{ Dr. STONE.
<i>Forensic Medicine</i>	{ Mr. CLUTTON and Dr. CORY.
<i>Pathological Anatomy</i>	{ Dr. PAYNE and Dr. SHARKEY.
<i>Botany</i>	{ Mr. A. W. BENNETT.
<i>Comparative Anatomy</i>	{ Mr. C. STEWART.
<i>Mental Disease</i>	{ Dr. H. RAYNER.
<i>State Medicine</i>	{ Dr. A. CARPENTER.

TEACHERS OF PRACTICAL SUBJECTS & DEMONSTRATORS.

<i>Practical Chemistry</i>	{ Dr. BERNAYS.
<i>Practical and Manipulative Surgery</i> ..	{ Mr. MASON. Mr. MAC KELLAR.
<i>Demonstrations in Anatomy</i>	{ Mr. REID, Mr. ANDERSON, Dr. TAYLOR, Mr. BALLANCE, and ASSISTANTS.
<i>Demonstrations in Morbid Anatomy</i> ..	{ Dr. SHARKEY and Dr. HADDEN.
<i>Demonstrations in Physiology</i>	{ Dr. T. D. ACLAND.
<i>Demonstrations in Practical Physiology</i> ..	{ Dr. T. D. ACLAND.
<i>Diseases of the Eye</i>	{ Mr. NETTLESHIP.
<i>Diseases of the Skin</i>	{ Dr. PAYNE.
<i>Diseases of the Throat</i>	{ Dr. F. SEMON.
<i>Diseases of the Ear</i>	{ Mr. CLUTTON.
<i>Diseases of the Teeth</i>	{ Mr. W. G. RANGER.

TIMES OF ATTENDANCE OF THE PHYSICIANS AND SURGEONS
IN THE WARDS.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Dr. BRISTOWE	—	2	—	—	2	—
Dr. STONE	2	—	—	2	—	—
Dr. ORD	2	—	—	2	—	—
Dr. HARLEY	—	2	—	—	2	—
Dr. GERVIS	2	—	—	2	—	—
Mr. SYDNEY JONES	—	2	—	—	2	—
Mr. CROFT	2	—	—	2	—	—
SIR WILLIAM MAC CORMAC ..	2	—	—	2	—	—
Mr. MASON	—	2	—	—	2	—
Mr. NETTLESHIP	9	—	—	9	—	—

TIMES OF ATTENDANCE OF THE ASSISTANT-PHYSICIANS AND
ASSISTANT-SURGEONS ON THE OUT-PATIENTS.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Dr. PAYNE	—	12.30	—	—	12.30	—
Dr. SHARKEY	12.30	—	—	12.30	—	—
Dr. GULLIVER	—	—	12.30	—	—	12.30
Dr. CORY (Women and Children)..	—	—	1.30	—	—	12.30
Mr. MAC KELLAR	12.30	—	—	12.30	—	—
Mr. CLUTTON	—	12.30	—	—	12.30	—
Mr. ANDERSON	—	—	12.30	—	—	12.30
Mr. PITTS	12.30	12.30	—	—	—	—

TIMES OF ATTENDANCE ON THE OUT-PATIENT SPECIAL
DEPARTMENTS. (See p. 21.)

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Mr. NETTLESHIP (Diseases of Eye)	1.30	1.30	1.30	1.30	1.30	—
Dr. PAYNE (Diseases of Skin) ...	—	—	12.30	—	—	—
Dr. SEMON (Diseases of Throat) ..	—	12.30	—	—	12.30	—
Mr. CLUTTON (Diseases of Ear) ..	12.30	—	—	—	—	—
Mr. ELLIOTT } (Diseases of Teeth)	—	10	—	—	10	—
Mr. RANGER }						
Dr. CORY (Vaccination)	—	—	11.30	—	—	—

DAYS AND HOURS OF ATTENDANCE ON LECTURES AND DEMONSTRATIONS.

WINTER SESSION.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Years of Attendance.
Physics	—	—	—	—	—	12	1st Year.
Chemistry	—	10½	—	10½	10½	—	do.
Descriptive and Surgical Anatomy ..	9½	9½	9½	9½	9½	—	1st & 2nd.
Anatomical Demonstrations*	10—4	10—4	10—4	10—4	10—4	10—2	do.
Physiology	—	4	4	—	4	—	do.
Physiological Demonstrations	—	—	11.30	—	11.30	—	do.
Practical and Manipulative Surgery	—	—	—	—	—	9	2nd.
Medicine { Oct. 1st to Dec. 31st	9	—	—	4	4	—	} 3rd.
{ Jan. 1st to Mar. 31st	4	—	—	9	9	—	
Surgery..... { Oct. 1st to Dec. 31st	4	—	—	4	4	—	} do.
{ Jan. 1st to Mar. 31st	9	—	—	9	9	—	
Pathological Anatomy (Practical) ..	—	—	—	—	—	11½—1½	3rd or 4th.
Ophthalmic Surgery, {	—	5	—	—	5	—	do.
Oct. 1st to Dec. 31st }	—	9	—	—	—	—	do.
Clinical Surgery (Special Course) ..	—	9	—	—	—	—	do.
Obstetric Demonstrations	—	—	9	—	—	—	do.

Demonstrations of Morbid Anatomy 2 p.m. daily.

SUMMER SESSION.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Years.
Materia Medica	9	—	9	—	9	—	1st Year.
Botany	—	10	10	—	—	10	do.
Practical Chemistry	10—12	—	—	10—12	10—12	—	do.
Practical Physiology	—	12.30	12.30	—	12.30	—	do.
Midwifery	4	4	—	4	4	—	2nd.
Comparative Anatomy	12	—	—	12	—	—	do.
Forensic Medicine	—	9	—	9	—	9	3rd.
Pathological Anatomy	—	—	9	—	9	—	do.
Do. Demonstration	4	—	—	—	—	—	do.
Practical and Manipulative Surgery	—	4	—	—	4	—	do.
Mental Diseases	—	—	—	—	12	—	do.
State Medicine	—	—	4	—	—	—	do.
Clinical Surgery (Special Course) ..	—	—	—	9	—	—	do.

Demonstrations of Morbid Anatomy 2 p.m. daily.

The times of delivery of the Clinical Lectures are arranged, in accordance with other work, in the course of the Session.

* The Dissecting Room is open to the Students from 9 a.m. till 5 p.m.

SURGICAL OPERATIONS are performed on Wednesdays and Saturdays at 1.30 p.m., except in cases of emergency.

In-Patients are admitted daily at Half-past 11 o'clock.

Out-Patients with Diseases of the Skin are seen by Dr. PAYNE, on Thursdays at Half-past 12 o'clock.

Diseases of Women and Children occurring amongst *Out-Patients* are treated, on Wednesdays at 1.30, and Saturdays at 12.30, by Dr. CORY.

Ophthalmic cases are seen as *Out-patients* by Mr. NETTLESHP, at 1.30 daily, except Saturdays; and the Operations are performed on Tuesdays at 4 and Fridays at 2 o'clock.

Out-Patients with Diseases of the Ear are seen by Mr. CLUTTON, on Mondays at Half-past 12 o'clock; and those with Diseases of the Throat by Dr. SEMON on Tuesdays and Fridays at the same hour. A short course of Clinical lectures on Throat Diseases is given to senior students by Dr. SEMON during the Winter Session.

Instruction in *Dental* Surgery is given by Mr. RANGER, and Mr. on Tuesdays and Fridays, at 10 o'clock.

Practical Instruction in the administration of anæsthetics will be given by Mr. OSBORN and Mr. TYRRELL.

Post-Mortem Examinations by Dr. SHARKEY and Dr. HADDEN, and Pathological Demonstrations, daily, at 2 o'clock p.m.

The Medical and Surgical *Casual Patients* are seen by the Resident Assistant-Physician, the Resident Assistant-Surgeon, the House-Surgeons, Assistant House-Surgeons and Dressers, at 12 o'clock daily.

In addition to the Clinical instruction given in the Wards and the *Out-Patients' Rooms* by the Medical and Surgical Officers, and the Special Course of Clinical Surgery, Lectures on Clinical Medicine and Surgery are delivered weekly during both the Winter and Summer Sessions by the Physicians and Surgeons to the Hospital; a Clinical lecture and Ophthalmoscopic demonstration are given, and a class for instruction in Diseases of the Eye is held by the Ophthalmic Surgeon, each once a week.

Practical instruction in Vaccination is given by Dr. CORY once a week.

St. Thomas's Hospital is now recognised as a Local Vaccination Station, and Dr. CORY is authorised to give certificates of instruction in Vaccination according to the requirements of the Local Government Board. Fee One Guinea.



SUGGESTIONS TO STUDENTS.

All gentlemen who propose to obtain the Licence of the Royal College of Physicians of London, the Diploma of the Royal College of Surgeons of England, or the Licence of the Society of Apothecaries, must, in order to be able to register their attendance upon Hospital practice or lectures, possess the certificate in Arts granted by one of the bodies whose certificates are recognised by the General Medical Council. The Regulations of the Medical Council as to the registration of Medical Students contain particulars of the Preliminary Examinations, and can be had from Spottiswoode & Co., 30, Parliament Street.

Students wishing to obtain a Medical Degree of the University of London *must* pass the *Matriculation* Examination; no other Preliminary will suffice. For the Matriculation, the Preliminary Scientific, and the Intermediate M.B. Examinations, Special Classes are held here (see p. 26).

Students not proposing to seek a degree in the University of London, will always reap much advantage by acquiring, in the Preliminary Scientific Class, the amount of scientific knowledge and training demanded by the University; generally, with respect to the formation of a sound foundation of Medical Study; specially, in that such knowledge is necessary in the competition for the Entrance Science Scholarship.

Students proposing to enter should put themselves, at an early period, in communication with the Secretary, who will be always ready to advise them. It is necessary, when writing to him, to state if any, and, if any, which Preliminary Examination has been passed, and if the name of the Student has been registered at the Medical Council Office.

Students when joining must produce a Certificate of Preliminary Examination or of Registration. It is best to join at the beginning of a Session, Winter or Summer, but it is in the power of a Student to enter at any time which he may find suitable.

Students are not obliged to remain at the Hospital more than three years, provided they have obtained the certificates of attendance upon lectures required by the respective licensing bodies. They must, however, in the event of leaving the Hospital, be engaged during the fourth year in the acquisition of professional knowledge elsewhere, unless they have completed a recognised period of study before coming to the Hospital.

It is right, however, that Students should be aware that the loss of the fourth year of Hospital Study is strongly to be deprecated, inasmuch as at that period the necessity of attending Lectures having ceased, the

whole time can be spent in the study of disease in the wards of the Hospital.

Students, when qualified, are strongly advised to use every effort to obtain the Senior appointments open to them, and especially those of Assistant and full House Physician, House Surgeon, &c. These appointments are accessible to Students of the Hospital without payment, and offer opportunities for obtaining practical professional knowledge, the value of which it is impossible to estimate too highly.



Students are recommended to attend the Lectures, &c., in the following order; and, in accordance with the Regulations of the Qualifying Bodies, are required to show by their answers in the Sessional Examinations, that they have paid proper attention to the Lectures in each Course.

FIRST YEAR.

Winter Session.—Anatomy, Dissections, Physiology, Chemistry.

Summer Session.—Materia Medica, Botany, Practical Physiology, Practical Chemistry.

SECOND YEAR.

Winter Session.—Anatomy, Physiology, Dissections, Practical Surgery, Clinical Medicine and Surgery.

Summer Session.—Midwifery, Comparative Anatomy, Clinical Medicine and Surgery.

N.B.—Students should defer further attendance on Lectures until they shall have passed the first Examination of the College of Surgeons.

THIRD YEAR.

Winter Session.—Medicine, Surgery, Clinical Medicine and Surgery.

Summer Session.—Forensic Medicine, Pathological Anatomy, Clinical Medicine and Surgery.

In addition to the above, Students are advised, during their first Winter Session, to attend the Lectures on Physics and Natural Philosophy; in their third or fourth Summer Session, to attend the extra course of Practical and Manipulative Surgery; the course of Ophthalmic Surgery, and instruction in the examination of the Eye; and the Lectures on Mental Disease, and on State Medicine; and in the third or fourth Winter the Practical Course of Pathological Anatomy, and the Obstetric Demonstrations. All these courses are freely open to Students of the Hospital.

They are also strongly recommended to devote, during the whole period of their attendance at the Hospital, as much time as they can spare from other engagements, to the study of Practical Medicine and Surgery in the wards and in the out-patients' rooms.

FEES FOR ATTENDANCE ON THE LECTURES AND ON THE PRACTICE OF THE HOSPITAL.

~~~~~ PERPETUAL TICKETS.

Admitting to Hospital Practice and Lectures for an unlimited period.

The Perpetual Fee to Hospital Practice and Lectures may be paid in several ways:

1st. One Hundred and Twenty-five Pounds paid on entrance;
2nd. One Hundred and Thirty-five pounds in two payments, £75 on entrance, and £60 at the beginning of the next year;

3rd. Payment by three instalments, viz., of £65 at the beginning of the first year, £50 at the beginning of the second year, and £30 at the beginning of the third year.

Gentlemen entering at St. Thomas's in the second* year of their Studentship pay £65 for that year; £25 for the third year; or upon paying £85 on entrance, they will become Perpetual Students. Students entering in their third year pay £40; for the next year £20, or one payment of £55 on entrance will entitle them to be Perpetual Students.

The Fee for attendance on the *general* subjects required of Students in Dental Surgery, is for the two years, £55, or by instalments, £50 for the first year, and £10 for the second year. If certificates for *Dental* practice are also required, the special fee for that subject (page 25) has to be paid.

Regularly qualified Medical Practitioners are admitted to the Hospital practice, and to the Lectures and Library, on payment of a fee of £12. 10s. for unlimited attendance; but are not entitled to receive certificates for such attendance without payment for the special certificates required (see p. 25).

All privileges in respect of Hospital attendance are granted subject to the approval of the Governors, and Students must conform to the regulations of the Hospital and Medical School, on which understanding alone cards of attendance are granted.

EXTRA CHARGES.

Students are now supplied with chemicals and materials to work with in the courses of Chemistry and Physiology

* Students who have commenced the study of the Profession otherwise than by attendance at a Medical School, will be considered to be first year's Students on joining the Medical School, as the time previously spent does not count until three years' Lectures have been attended, but a deduction from the Perpetual Fee will be allowed in such cases.

without extra charge, but there are certain instruments and materials required during the course of study, as follows, viz.:

Those attending the Class of Practical Physiology in the summer should provide themselves with Microscopes.

Students Dissecting pay for the parts they dissect at fixed rates, which are notified in the Library.

The Clinical Clerks must provide themselves with a Stethoscope and Registering Clinical Thermometer. The Dressers are required to have a Registering Clinical Thermometer, a Pocket Case of Instruments, and a Case of Silver Catheters.

The fee for Practical Pharmacy is not included in the Perpetual fee, as many Students have learned it before joining a Medical School; but instruction in Pharmacy and Pharmaceutical Manipulation, to meet the requirements of the Royal Colleges of Physicians and Surgeons, and of the Society of Apothecaries, is given in the Dispensary of the Hospital by the Apothecary, Mr. S. PLOWMAN. The fee for this course of instruction is 5 Guineas for three months. Application to be made to the Secretary.

The different Courses of Lectures, or the Hospital Practice, may also be attended separately on the following terms, which entitle to Certificates for such Attendances.

For the Medical and Surgical Practice, including Clinical Lectures and the Special Departments.

Three months	£15	Twelve months	£40
Six ditto	£26	Perpetual	£55
Nine ditto	£35		

Dental Practice, 1 year 2 Gs., Perpetual 3 Gs.

Midwifery Practice, 5 Gs.

Ophthalmic Practice, 2 Gs.

For Lectures and Demonstrations.

1 Course. Perpetual.

Medicine, Surgery, Physiology, Anatomy, Chemistry each 7 Gs. .. 10 Gs.

Midwifery 5 " .. 6 "

Materia Medica, Botany, Physics, Forensic Medicine, } 4 " .. 5 "

General Pathology, and Comparative Anat. each }

Mental Diseases, Ophthalmic Surgery, State Medicine each 2 " .. 3 "

* Practical Chemistry, Practical Surgery, Practical } 6 " .. —

Physiology, Pathological Anatomy, including the }

Practical Course each }

Dissections, three months 4 Gs., six months 6 Gs., Perpetual 10 Gs.

Operative Surgery—A voluntary class will be formed by MESSRS. MACKELLAR and CLUTTON during the Summer, and at other convenient times, for Gentlemen who wish to prepare for the Fellowship or other Examinations. This course will not include Operations on the Eye-ball Fee, £5 5s.

Operative Surgery of the Eye.—A voluntary class will be formed by Mr. NETTLESHIP during the Summer, in connection with the preceding course. Fee, £1 1s. This course may also be taken separately, either in Summer or Winter. Fee, £2 2s.

Laryngology.—A special course is given by Dr. SEMON during the Winter Session. Fee for Gentlemen, not Students of the Hospital, 3 Gs.

Special Courses of Obstetric Demonstrations are given by Dr. CORY throughout the year. Fee, £3 3s.

* These amounts do not include the extra charges in the Practical Courses for Materials, Instruments, &c.

UNIVERSITY OF LONDON

MATRICULATION, PRELIMINARY, SCIENTIFIC, AND INTERMEDIATE M.B. CLASSES.

MATRICULATION EXAMINATION.

Classes in the following subjects will commence in October for the January Examination, and in March for the June, and be continued as follows:

Chemistry	Dr. BERNAYS	Mon. and Fri. at 12.
English Language, History and Geography	Dr. MAYBURY	{ Mondays, Wednesdays, Thursdays, 2 to 3.
French and German	A. VON WATZDORF	Mon. and Thurs., 3.
Greek and Latin	Dr. MAYBURY	{ Mondays, Wednesdays, Thursdays, 1 to 2.
Mathematics and Natural Philosophy	A. LE SUEUR, B.A.	{ Tuesdays and Fridays, 2 o'clock.

Fee for the whole Course, *Ten Guineas*; arrangements can be made to attend one or more Subjects only. Subsequent Courses, half Fee.

PRELIMINARY SCIENTIFIC EXAMINATION.

Special Classes in the subjects required for the Preliminary Scientific Examination at the University of London, will be held from October to July, and will include all the subjects required as follows:

Botany	{ A. W. BENNETT, M.A., B.Sc. Lond., &c. }	Wednesdays, 11 to 12.
Chemistry (Inorganic)	Dr. BERNAYS	{ Tuesdays, Winter, 11.30. Summer, 12 to 1.
Do. (Practical)	Do.	Fridays, 11.30. Winter only.
Mechanical and Natural Philosophy	W. H. STONE, M.B. Oxon.	{ Sat. 12, Oct. to March. Fridays 3, Jan. to July.
Zoology	C. STEWART, M.R.C.S., &c.	{ Thurs. 11.30, Oct. to Mar. Sat. 11, May to July.

The Fee charged to Students of the Hospital for instruction in the above is* *Six Guineas.*

To others, inclusive of Practical Chemistry and Chemicals *Twelve Guineas.*

Fee for any single subject *Three Guineas.*

Subsequent Courses, half Fee.

* Instruction in Practical Chemistry is necessary for this Examination. This, so far as Students of the Hospital are concerned, is held to be given in the course of Practical Chemistry attended by all Students in their first Summer, the requirements of the University being specially regarded in this Course, but Students requiring a Second Course of Practical Chemistry, are charged *A Guinea and a-half for Chemicals.*

INTERMEDIATE EXAMINATION IN MEDICINE.

Special Classes in the subjects required for this Examination are held by the different Lecturers on those Subjects, from January to July.

Anatomy	R. W. REID, Esq., C.M. ..	Thursdays, 11.
Materia Medica and	W. H. STONE, M.B. Oxon ..	Wednesdays, 2.30.
Therapeutics	{ S. PLOWMAN, Esq. }	Tuesdays, 2.30.

Organic Chemistry	Dr. BERNAYS	Wednesdays, 11.30.
Do. Analysis	Do.	Saturdays, 10.
Physiology	Mr. STEWART	Fridays, 11.
Fee to Students of the Hospital inclusive of		
Organic Analysis and Chemicals*		Nine Guineas.
To others ditto		Twelve Guineas.
Fee for any Single Subject		Three Guineas.
Subsequent Courses, half Fee (except Chemicals, for which full fee is charged).		
* Instruction and Practice in Organic Analysis is essential for this Examination.		
N.B.—Private Classes are held for the Final M.B. Examination.		

SCHOLARSHIPS, PRIZES, APPOINTMENTS, AND HONORARY DISTINCTIONS.

OPEN SCHOLARSHIPS IN NATURAL SCIENCE.

As an inducement to the study of Natural Science before the commencement of the strictly Medical Course, two Scholarships, of the value of £100 and £60 respectively, are awarded annually, after an examination in Physics, Chemistry, and either Botany or Zoology, at the option of Candidates. The Examinations for these Scholarships will be held on October 3rd, 4th, and 5th, 1883, the subjects being the same as those for honours in the Preliminary Scientific Examination of the London University, viz.: Botany, Zoology, Inorganic Chemistry (including Practical Chemistry), and Physics or Natural Philosophy. These Scholarships are open to all Students who have passed a recognised Preliminary Examination in Arts, and have not yet attended Lectures on Anatomy and Physiology of the first year, without any condition as to their becoming Students of the Hospital, except in the case of successful Candidates, who must enter at once as Perpetual Pupils. Chemistry and Physics shall be compulsory subjects for this Examination, and Candidates must take up one of the other subjects at their option. The Examination will be conducted by means of written papers and practical work. The names of Competitors with Certificate of Preliminary Examination must be sent to the Secretary not later than September 29th.

THE WILLIAM TITE SCHOLARSHIP.

This Scholarship, founded by the late Sir W. TITE, C.B., M.P., F.R.S., and endowed with £1,000 Consols, producing £30 per Annum, is awarded each year to the Student placed highest in the 1st Class List in the examinations at the end of the first Winter Session. Preference, in case of equality between Students, is to be given to the son of a medical man, and more particularly of one who has been educated at St. Thomas's Hospital or is in Practice in Bath.

THE MUSGROVE SCHOLARSHIP.

This Scholarship, founded by Sir JOHN MUSGROVE, Bart., the late President of the Hospital, and endowed with £1,400 Consols, producing 40 Guineas per Annum, is awarded biennially to the Student who shall take the highest place in the 1st Class List in the examinations at the end of the Second Winter Session. It is tenable for two years, provided the holder obtains a place in the 1st Class in the Examinations at the end of the third winter.

THE PEACOCK SCHOLARSHIP.

This Scholarship, founded by the will of the late Dr. Thomas Bevell Peacock, for many years Physician, and at the time of his death Consulting Physician, to St. Thomas's Hospital, is of the same value as the Musgrove Scholarship, is awarded and held upon the same terms; and is given every second year in alternation with that Scholarship.

Gentlemen obtaining these Scholarships are not precluded from receiving any of the Prizes awarded at the subsequent periodical examinations.

P R I Z E S.

The following Scholarships, Prizes, and Medals, will be offered for Competition during the year 1883-1884:—

TWO OPEN SCHOLARSHIPS IN NATURAL SCIENCE of the value of £100 and £60 respectively, at Entrance.

AT THE END OF FIRST YEAR.

Winter.

1st.	..	The William Tite Scholarship	..	..	..	£30.
2nd.	..	College Prize	..	..	..	£20.
3rd.	..	Ditto	..	..	..	£10.

Summer.

1st.	..	College Prize	..	..	..	£15.
2nd.	..	Ditto	..	..	..	£10.

SECOND YEAR.

Winter.

1st.	..	The Peacock Scholarship	..	..	..	£42.
2nd.	..	College Prize	..	..	..	£20.
3rd.	..	Ditto	..	..	..	£10.

Summer.

1st.	..	College Prize	..	..	..	£15.
2nd.	..	Ditto	..	..	..	£10.

THIRD YEAR.

Winter.

Second Tenure of The Musgrove Scholarship (if holder obtains 1st Class) in this examination £42.

1st.	..	College Prize	..	..	..	£20.
2nd.	..	Ditto	..	..	..	£15.
3rd.	..	Ditto	..	..	..	£10.

Summer.

1st.	..	College Prize	..	..	..	£15.
2nd.	..	Ditto	..	..	..	£10.

Students of each year are classed according to their respective merits in the examinations, and those in the *first* class in each year receive Certificates of Honour, and a preference in the selection for Hospital Appointments.

In addition there are awarded—

THE CHESELDEN MEDAL, *Annually.*

THE MEAD MEDAL, *do.*

THE SOLLY MEDAL AND PRIZE, *Biennially.*

THE GRAINGER TESTIMONIAL PRIZE, *do.*

THE TREASURER'S GOLD MEDAL, *Annually.*

The CHESELDEN MEDAL, founded by the late GEORGE VAUGHAN, Esq., is annually awarded to the Fourth Year's Student who most distinguishes himself in respect of a Special Practical Examination in Surgery and Surgical Anatomy.

The MEAD MEDAL, founded by Mr. and Mrs. NEWMAN SMITH, is awarded annually, to a Fourth Year's Student, in respect of a Special Practical Examination in Medicine, Pathology and Hygiene.

Competitors for either of these Medals must have been Students of St. Thomas's for at least two out of the four Winter Sessions.

The **SOLLY MEDAL**, together with a Prize in Money, will be awarded biennially. Those Students are eligible to compete who shall be of from three to six years' standing. The award is made for the best series of Reports of Surgical cases coming under the Students' personal observation in the Wards, not, however, to exceed ten in number. Preference is given, merit in other respects being equal, to Reports illustrated by the author's drawings, and short Clinical Remarks must accompany each Report. The next award will be made at the end of 1883-84, papers to be sent in before April 1st, 1884.

The **GRAINGER TESTIMONIAL PRIZE**, of the value of Twenty Pounds, is awarded biennially to Students who shall be of from three to six years' standing, for the best Physiological Essay, to be illustrated by preparations and dissections. Competitors for this Prize must be Medical Students of St. Thomas's Hospital, and on the day of sending in their Essays, Dissections, and Preparations, shall have completed the Second, and not more than the sixth year of their medical studies. The next award will be made in 1884, papers to be sent in before October 1st, 1884.

The **TREASURER'S GOLD MEDAL** for General Proficiency and Good Conduct, is awarded at the end of the 4th Winter Session to the Student who has passed through his pupilage in St. Thomas's Hospital in the most meritorious manner.

TWO RESIDENT and one **NON-RESIDENT HOUSE PHYSICIANS**, and an **ASSISTANT HOUSE PHYSICIAN**, **TWO HOUSE SURGEONS**, an **ASSISTANT HOUSE SURGEON**, and a **RESIDENT ACCOUCHEUR**, are selected every three months from Gentlemen who have obtained their professional diplomas; they hold office for three or six months. One House Physician, the Assistant House Physician, and the Assistant House Surgeon, are non-resident, but the other Officers, together with the Dressers and Obstetric Clerks, are provided with Rooms and Commons during their period of attendance in the Hospital, free of expense.

An **OPHTHALMIC CLINICAL ASSISTANT**, chosen from Qualified Students who have worked satisfactorily in the Ophthalmic Department, is appointed for six months with a Salary at the rate of £50 per annum, with board but not residence; the appointment is renewable for a limited period.

CLINICAL CLERKS, and **DRESSERS**, to In-Patients are selected to the number of at least 100 each year. They are chosen from amongst the most eligible pupils. **CLINICAL CLERKS**, and **DRESSERS**, for the Out-Patients are also appointed to the number of at least 80 to 100 each year.

ALL STUDENTS have the opportunity afforded them of being engaged in the performance of practical duties in connection with the Medical, Surgical, Obstetrical, Ophthalmic, and Pathological Departments of the Hospital.

TWO HOSPITAL REGISTRARS, at an annual Salary of £100 each, are appointed in each year. Preference will be given to Gentlemen who have been distinguished for merit, and have completed their studies in the School. The payment of the Registrars is subject to the presentation of a Report upon the Practice of the Hospital, and to such Report being regarded as satisfactory by the Medical Officers to whom it shall have been referred.

TWO OR MORE STUDENTS are selected from those who have completed their Second Winter Session, to act as Assistants in the Physiological Laboratory.

TWO OR MORE STUDENTS are selected from those who have completed their Second Winter Session, to act as Assistants in the Dissecting Room. They receive Certificates of Honour according to merit.

PROSECTORS are appointed in the early part of the Winter Session, and Prizes are awarded to the best Dissectors at the termination of the Session.

STUDENTS are likewise appointed to act as Assistants to the Demonstrators of Pathological Anatomy in the Post-mortem Room.

OBSTETRIC CLERKS, who reside and have Commons in the Hospital, are appointed in rotation. Each holds office for a fortnight, and Certificates of Honour are awarded to those Gentlemen who have satisfactorily attended Sixty Maternity cases.

Students have access, with the permission of the Officers under whose superintendence they are placed, to the Museums of Human and Comparative Anatomy and Pathology—of *Materia Medica*—of Botany—and of Chemistry and Mineralogy—and to the Laboratories of Practical Physiology and Practical Chemistry; also to the Library, which contains a large collection of works of reference and modern text-books.

REGULATIONS FOR THE EXAMINATION AND CLASSIFICATION OF THE STUDENTS.

1. In accordance with the Regulations of the Qualifying Bodies, Students will be required to attend the Class Examinations in the subjects for which they have to be certified, and show by their answers to the questions that they have paid proper attention to the Lectures, otherwise their Schedules cannot be signed.

2. There shall be held at least two Examinations in each Winter and one in each Summer Session in each subject on which attendance is required during that Session, and the marks obtained in these Examinations shall be the basis for the Classification of Students and the Award of Prizes for each Session respectively. Provided that any extra Examination in the course of the Session, in any subject, be not allowed to interfere with the ordinary Lectures in other subjects.

3. The number of marks allotted to each subject in the following Schedule is not to be exceeded in case the number of Examinations held during the Session be more than two, but must be distributed amongst the several Examinations.

1st YEAR'S SUBJECTS.	
WINTER . Anatomy	600
Practical Anatomy	200
Physiology	600
Chemistry	600

Total 2000

SUMMER . Practical Chemistry	300
Materia Medica	300
Botany	150
Practical Physiology	300

Total 1050

2nd YEAR'S SUBJECTS.

WINTER . Anatomy	600
Practical Anatomy	200

Total 800

2nd YEAR'S SUBJECTS—continued.

Physiology	600
Practical Surgery	200
SUMMER . Midwifery	500
Comparative Anatomy	100

Total 1400

3rd YEAR'S SUBJECTS.

WINTER . Medicine	650
Surgery	650

Total 1300

3rd SUMMER.

Forensic Medicine	250
Pathological Anatomy	350

Total 600

4. All Students who have obtained at least one-third of the total number of marks in each subject, and not less than two-thirds of the total number allotted to all the subjects collectively, shall be placed in the 1st Class.

Those who have obtained one-third of the total number of marks allotted to all the subjects collectively shall be placed in the 2nd Class.

The names of those who do not obtain either a 1st or 2nd Class position will not be published, but a General List showing the exact position of each Student at every Examination shall be kept by the Secretary, from whom any Student can learn his own position, but no Lecturer shall make known to Students the number of marks obtained by any Student in any subject.

5. The Prizes shall be awarded to the Students holding the 1st, 2nd, and 3rd positions in the 1st Class of each Winter Session, and to those holding the 1st and 2nd positions of the 1st Class in each Summer Session.

6. The number of marks allotted to the Examinations for the MEAD and CHESELDEN Medals shall be 600 each.

7. In awarding the TREASURER'S Medal the number of marks obtained at the Sessional Examinations and in the MEAD and CHESELDEN Examinations shall be counted, provided that, as regards the Examination for the Medals, two-thirds of the maximum marks be obtained, but those obtained in the Entrance Scholarship Competition shall not be included.

8. The Authorities reserve the right of withholding any Prize, if no competitor of sufficient merit presents himself.

Distribution of Prizes for the Past Sessions.

SUMMER SESSION, 1882.

FIRST YEAR'S STUDENTS.

J. S. HUTTON, <i>Sevenoaks</i>	{ College Prize, £15, and Certificate of Honour.
K. TOTSUKA, <i>Japan</i>	{ College Prize, £10, and Certificate of Honour.
G. T. QUILLER, <i>Clapham</i>	Certificate of Honour.
H. C. KIDD, <i>Upper Norwood</i>	Certificate of Honour.
S. WARREN, <i>Dover</i>	Certificate of Honour.
C. DE GRUCHY, <i>Ludlow</i>	Certificate of Honour.
S. H. JONES, <i>Hanover Square</i>	Certificate of Honour.
J. HEWAN, <i>Chester Square</i>	Certificate of Honour.
A. BROCKAT, <i>Denmark Hill</i>	Certificate of Honour.
A. J. H. MONTAGUE, <i>Lewisham</i>	Certificate of Honour.
C. BROWN, <i>Lavender Hill</i>	Certificate of Honour.
A. E. GODFREY, <i>Northampton</i>	Certificate of Honour.
E. GODDY, <i>Hampstead</i>	Certificate of Honour.
W. F. WARD, <i>Chelsea</i>	Certificate of Honour.
W. STAVELEY, <i>Kensington</i>	Certificate of Honour.
F. PARSONS, <i>Lee</i>	Certificate of Honour.

SECOND YEAR'S STUDENTS.

R. F. CANN, <i>Plymouth</i>	{ College Prize, £15, and Certificate of Honour.
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THIRD YEAR'S STUDENTS.

C. D. GREEN, <i>New Cross</i>	{ College Prize, £15, and Certificate of Honour.
W. B. TOMSON, <i>Luton, Beds.</i>	{ College Prize, £10, and Certificate of Honour.
H. B. ROBINSON, <i>Lower Norwood</i>	Certificate of Honour.

WINTER SESSION, 1882-83.

ENTRANCE SCIENCE SCHOLARSHIPS.

H. DUNCAN, <i>London</i>	{ Scholarship, £100, and Certificate of Honour.
E. D. SHIRTLIFF, <i>Kingston-on-Thames</i>	{ Scholarship, £60, and Certificate of Honour.

FIRST YEAR'S STUDENTS.

H. P. HAWKINS, <i>Hawkhurst</i>	{ The Wm. Tite Scholarship, £30, and Certificate of Honour.
H. DUNCAN, <i>London</i>	{ College Prize, £20, and Certificate of Honour.
H. G. SMYTH, <i>Brondesbury</i>	{ College Prize, £10, and Certificate of Honour.
S. B. COOK, <i>Cape of Good Hope</i>	Certificate of Honour.
H. J. MACEVOY, <i>Pimlico</i>	Certificate of Honour.
E. C. STABB, <i>Nfracombe</i>	Certificate of Honour.
W. F. BROOK, <i>Fareham</i>	Certificate of Honour.
E. SOLLY, <i>Congleton</i>	Certificate of Honour.
L. A. BIDWELL, <i>Blackheath</i>	Certificate of Honour.
S. W. WHEATON, <i>Battersea</i>	Certificate of Honour.
H. HUDSON, <i>Tottenham</i>	Certificate of Honour.
C. T. QUILLER, <i>Clapham</i>	Certificate of Honour.
C. BROWN, <i>Lavender Hill</i>	Certificate of Honour.
T. H. GODFREY, <i>Northampton</i>	Certificate of Honour.

SECOND YEAR'S STUDENTS.

Equal { S. H. JONES, <i>Hanover Square</i>	{ The Musgrove Scholarship, 40 Gs. and Certificate of Honour.
{ K. TOTSUKA, <i>Japan</i>	{ College Prize, £20 and Certificate of Honour.
E. S. GOODDY, <i>Hampstead</i>	{ College Prize, £10, and Certificate of Honour.
H. C. KIDD, <i>Upper Norwood</i>	Certificate of Honour.
F. D. CROWDY, <i>The Temple</i>	Certificate of Honour.
J. S. HUTTON, <i>Sevenoaks</i>	Certificate of Honour.
S. WARREN, <i>Dover</i>	Certificate of Honour.
A. E. GODFREY, <i>Northampton</i>	Certificate of Honour.

THIRD YEAR'S STUDENTS.

H. H. LANKESTER, <i>Leicester</i>	{ 2nd Tenure of the College Scholarship, 40 Gs.
T. SCUTT, <i>Bere Regis</i>	{ College Prize, £20, and Certificate of Honour.
R. LAWSON, <i>St. Andrew's, N.B.</i>	{ College Prize, £15, and Certificate of Honour.
W. G. MACKENZIE, <i>Cambridge</i>	{ College Prize, £10, and Certificate of Honour.

ANATOMICAL ASSISTANTS.

A. B. WOAKES, <i>Harley Street</i>	Certificate of Honour.
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PROSECTORS.

S. H. JONES, <i>Hanover Square</i>	Prize and Certificate of Honour.
F. PARSONS	Prize and Certificate of Honour.
W. STAVELEY	Certificate of Honour.
A. L. ACHARD	Certificate of Honour.

GRAINGER TESTIMONIAL PRIZE

C. S. SHERRINGTON	{ Prize, £20, and Certificate of Honour.
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PRACTICAL MEDICINE.

F. F. CAIGER	{ The Mead Medal, founded by Mr. & Mrs. NEWMAN SMITH.
A. E. CHARPENTIER	{ Special Mention and Certificate of Honour.

SURGERY AND SURGICAL ANATOMY.

G. D. JOHNSTON	{ The Cheselden Medal, founded by the late GEORGE VAUGHAN, Esq. Special Mention and Certificates of Honour.
F. F. CAIGER }	... ..
C. D. GREEN }	... ..

RESIDENT ACCOUCHEURS.

A. E. WELLS	... ..	Certificate of Honour.
G. F. COOPER	... ..	Certificate of Honour.
S. W. SUTTON	... ..	Certificate of Honour.
T. D. SAVILL	... ..	Certificate of Honour.

HOUSE PHYSICIANS.

A. E. WELLS	... ..	Certificate of Honour.
W. WANSBROUGH JONES	... ..	Certificate of Honour.
C. W. HAIG BROWN	... ..	Certificate of Honour.
W. FELL	... ..	Certificate of Honour.
L. W. BICKLE, Non. Res.	... ..	Certificate of Honour.

ASSISTANT HOUSE PHYSICIANS.

F. E. MARSTON	... ..	Certificate of Honour.
G. F. COOPER	... ..	Certificate of Honour.
C. W. HAIG BROWN	... ..	Certificate of Honour.
E. F. WHITE	... ..	Certificate of Honour.
H. M. N. MILTON	... ..	Certificate of Honour.
L. W. BICKLE	... ..	Certificate of Honour.
W. FELL	... ..	Certificate of Honour.
W. J. SHEPPARD	... ..	Certificate of Honour.

HOUSE SURGEONS.

W. A. DUNCAN	... ..	Certificate of Honour.
C. W. HAIG BROWN	... ..	Certificate of Honour.
H. M. MILTON	... ..	Certificate of Honour.
A. E. WELLS	... ..	Certificate of Honour.

ASSISTANT HOUSE SURGEONS.

H. M. N. MILTON	... ..	Certificate of Honour.
W. FELL	... ..	Certificate of Honour.
G. F. COOPER	... ..	Certificate of Honour.
W. HULL	... ..	Certificate of Honour.

FOR GENERAL PROFICIENCY AND GOOD CONDUCT.

W. B. TOMSON	{ The Treasurer's Gold Medal. Special Mention. Qualified to receive the Medal.
C. D. GREEN	

The following Distinctions have been obtained by Students of St. Thomas's Hospital during the past year:—

The Gold Medal in Surgery at the M.S. Examination of the London University, by Mr. C. A. Ballance, M.B., Demonstrator of Anatomy.

The Gold Medal and Exhibition in Surgery at the B.S. Examination of the London University, by Mr. F. R. Walters, M.B.

The Gold Medal in Surgery at the B.S. Examination of the London University, by Mr. S. W. Sutton, M.B.

The First Prize Gold Medal for Botany at the June examination, and the First Prize Gold Medal for Materia Medica and Pharmaceutical Chemistry at the August examination, 1882, were awarded by the Apothecaries Society to Mr. T. Barker Smith, 3rd year's student.

Natural Science Tripos, Cambridge University.

1st Class, with distinction, in Physiology, C. S. Sherrington.

1st Class in Physiology, C. S. Evans.

THE MUSEUM OF HUMAN AND COMPARATIVE ANATOMY AND PATHOLOGY.

Curator.—Mr. C. STEWART.

AMONG the earliest contributors to this Museum were Mr. CLINE, Sir A. COOPER, Mr. TRAVERS, and Mr. TYRRELL.

The Printed Catalogue of the Museum consists of three octavo volumes: in the first volume, edited by Mr. JOHN F. SOUTH, are described the preparations of Healthy Human, Microscopical, and Comparative Anatomy; and the 2nd and 3rd volumes, edited by Mr. SYDNEY JONES, contain descriptions of the specimens illustrative of Pathological Anatomy.

The COLLECTION of HUMAN ANATOMY consists of a Physiological and a Pathological Department: the former contains, besides wax models and casts, a large number of dissected Preparations, illustrating the Organs of Locomotion and Sense; the Nervous System; the Digestive, Respiratory, and Urinary Apparatus; the Vascular System, the Organs of Reproduction, and the Tissues.

The Pathological Division is very rich, containing above 3000 Specimens, arranged in thirty-seven Sections, as follows:

SECT.

- A. Injuries of Bone: Fractures.
- B. Injuries of Joints: Dislocations.
- C. Diseases of Bone.
- D. Diseases of Joints.
- E. Diseases of the Spinal Column.
- F. Injuries and Diseases of the Muscular System.
- G. Injuries and Diseases of the Eye.
- H. Injuries and Diseases of the Ear.
- I. Injuries and Diseases of the Nose, Antrum, &c.
- K. Injuries and Diseases of the Skin and Subcutaneous Cellular Tissue.
- L. Injuries of the Skull.
- M. Injuries of the Spine.
- N. Injuries and Diseases of the Nervous System.
- O. Injuries and Diseases of Mouth, Fauces, Pharynx, and the Œsophagus.
- P. Injuries and Diseases of the Stomach.
- Q. Injuries and Diseases of the Intestines and Peritoneum.
- R. Intussusception, Internal Strangulation, and Hernia.
- S. Injuries and Diseases of the Liver.
- T. Diseases of the Pancreas and Salivary Glands.
- U. Injuries and Diseases of the Spleen.
- V. Diseases of Thyroid, Thymus, and Suprarenal Capsules.

SECT.

- W. Injuries and Diseases of the Respiratory Apparatus.
- X. Injuries and Diseases of the Heart and Pericardium.
- Y. Injuries and Diseases of Arteries and Veins.
- Z. Diseases of Lymphatic and Lacteal Vessels and Glands.
- AA. Injuries and Diseases of the Kidneys, and Ureters.
- BB. Injuries and Diseases of the Bladder.
- CC. Diseases of the Prostate Gland and Vesiculae Seminales, Urinary and Prostatic Calculi.
- DD. Injuries and Diseases of the Penis and Urethra.
- EE. Injuries and Diseases of the Testicles and Scrotum.
- FF. Diseases of the Ovaries and Fallopian Tubes.
- GG. Injuries and Diseases of the Uterus, Vagina, and external organs.
- HH. Diseases and displacements of the Ovary.
- II. Diseases of the Breast.
- KK. Tumours and other allied Morbid Growths.
- LL. Malformations.
- MM. Wax Models and Casts.

BONES, JOINTS, &c.—Amongst the specimens illustrating Injuries of Bones and Joints, are nearly all those described and figured in Sir A. Cooper's Treatise on 'Dislocations and Fractures of the Joints,' and in Cooper's and Travers's 'Surgical Essays.'

This section has been recently much enriched by numerous specimens of gunshot injuries, presented by Sir William Mac Cormac, chiefly fractures from bullet and shell wounds obtained from cases under his treatment during the Franco-German War.

Sir A. Cooper's preparations, illustrating repair after fracture, are contained in this Section.

EYE.—This Section has been arranged by Mr. Dixon, and contains specimens described and figured by Sir A. Cooper, Mr. Travers, and Mr. Saunders.

SKIN.—Several Tumours are contained in this Section, as well as, amongst others, that horny growth, ten inches in length, removed from a man's forehead by Sir A. Cooper.

HEAD, SPINE, NERVOUS SYSTEM.—Showing all kinds of Injuries to the Skull; Spinal Injuries, which have been subjected to operation by Cline, Tyrrell, and South, as well as every variety, frequent and rare, of disease of the Nervous System.

INTESTINES AND PERITONEUM.—Travers's Preparations, illustrating 'The Process of Nature in repairing Injuries of the Intestines,' are contained in this Section. There are also Specimens illustrating the Morbid Anatomy of Fever, &c.

HERNIA.—This Section contains nearly all the Preparations figured and described in 'Cooper's Hernia.' Besides the more common varieties of Hernia, there are Specimens of Mesenteric, Mesocolic, Vesical, Thyroideal, Ischiatic, Perineal, and Phrenic Hernia.

LIVER.—Besides every variety of Liver Disease, this Section contains a large number of Biliary Calculi.

RESPIRATORY AND VASCULAR SYSTEMS.—Amongst these Preparations are two Specimens, showing ligature of the Abdominal Aorta; one of them the case of Sir A. Cooper; the other that of Mr. John F. South. There are also Specimens of spontaneous obliteration of the Aorta.

The Preparations illustrative of Travers's experiments on Arteries and Veins are in the collection.

There are also very interesting Specimens of Diseased Heart, described by Dr. Wells and Dr. Elliotson.

KIDNEYS.—Described and arranged by Mr. Simon.

URINARY CALCULI.—250 in number—analysed by Mr. Heisch and Dr. Bernays.

TESTES.—Most of the preparations figured in Sir A. Cooper's work 'On the Testis,' are contained in this Section.

MALFORMATIONS.—This Section contains Specimens of Spina Bifida, Acephalous and double monsters, Ectopia Cordis, Malformations of the Heart, Urinary, and Generative Organs. Most of them have been elaborately described by Mr. R. D. Grainger, and the malformations of the heart are referred to by Dr. Farre and Dr. Peacock in their works. There are also very interesting specimens of malformation described by Dr. Bristowe, Mr. Le Gros Clark, and Mr. Sydney Jones.

The Museum contains a considerable number of valuable Ethnological Specimens.

THE MUSEUM OF COMPARATIVE ANATOMY contains about 1,000 Preparations, some of them very rare and valuable.

A large number of these Specimens were made by Sir A. Cooper, to illustrate his Lectures, when Professor of Comparative Anatomy to the Royal College of Surgeons.

THE CABINETS OF MICROSCOPICAL ANATOMY, which are under the charge of the Demonstrator of Practical Physiology, contain upwards of 2,000 injected and other Specimens of normal and morbid Histology, parasites, urinary deposits, &c. These include the Preparations made by Mr. Rainey, to illustrate the Histological Course of Lectures; and others described by him in Papers published in the Philosophical, Medico-Chirurgical, and Microscopical Transactions, and in various scientific works. The specimens are available for use by students who wish to examine them, subject to such regulations as may be deemed necessary.

THE MATERIA MEDICA MUSEUM contains at least 600 specimens, arranged and labelled according to the British Pharmacopœia of 1867, and is now under the superintendence of Dr. STONE.

THE MUSEUM OF CHEMISTRY AND MINERALOGY is under the Superintendence of Dr. Bernays, who founded the Museum and presented the larger part of the Specimens contained in it.

St. Thomas's Hospital.

MEDICAL AND PHYSICAL SOCIETY.

Hon. President, 1883-84.

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This Society was originated in the early part of the present century by students of the Hospital, and has for its object the reading and discussion of papers on Medicine, Surgery, and subjects of General Interest, the narration of cases, and the exhibition of specimens of Physiological and Pathological interest. The Meetings are held in the Library on alternate Thursdays at 8 P.M., and terminate not later than 10 P.M.

The annual soirée is held in December, in Governor's Hall, to which past and present students are invited.

Further information can be obtained of the Hon. Secretaries.

ST. THOMAS'S HOSPITAL REPORTS.

VOL. XII., NEW SERIES,

EDITED BY

F. MASON, F.R.C.S., AND SEYMOUR J. SHARKEY,
M.A., M.B. OXON.,

Will be Published immediately.

It will contain contributions from Members of the Staff and others, together with the Statistical Reports of the Hospital, by the Medical and Surgical Registrars, to December 31st, 1882.

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OCTOBER, 1883.

1	M	Introductory Address, 3 P.M. Annual Dinner.
2	TU	Clinical Clerks and Dressers commence duty.
3	W	Entrance Scholarships Exam., 3rd, 4th, & 5th.
4	TH	Exam. Soc. Apoth., every Thursday.
5	F	
6	S	
7	S	Twentieth Sunday after Trinity.
8	M	
9	TU	
10	W	
11	TH	
12	F	
13	S	
14	S	Twenty-first Sunday after Trinity.
15	M	
16	TU	
17	W	St. Luke.
18	TH	
19	F	
20	S	
21	S	Twenty-second Sunday after Trinity.
22	M	
23	TU	
24	W	
25	TH	
26	F	
27	S	
28	S	Twenty-third Sunday after Trinity.
29	M	
30	TU	
31	W	

The Hospital Entrance Science Scholarships Examination takes place during this month.

The Registration and Museum Committees meet during this month

NOVEMBER, 1883.

1	TH	Exam. Soc. Apoth., and every Thursday.
2	F	
3	S	
4	S	Twenty-fourth Sunday after Trinity.
5	M	Univ. Lond. 2nd M.B. Exam.
6	TU	[Surgs., & Asst. do.; of Res. Accouch., & Ophth. Asst.*
7	W	Last day for applications for offices of House Phys. and
8	TH	
9	F	Prince of Wales born, 1841.
10	S	
11	S	Twenty-fifth Sunday after Trinity.
12	M	[and Surgical Registrarships.
13	TU	Notice—30th, last day for applications for Medical
14	W	Meeting to appoint House Officers, &c.
15	TH	
16	F	
17	S	
18	S	Twenty-sixth Sunday after Trinity.
19	M	
20	TU	Univ. Lond. M.B. list published.
21	W	Univ. Lond. 2nd M.B. Honours Exam.
22	TH	Exam. Soc. Apoth.
23	F	
24	S	
25	S	Twenty-seventh Sunday after Trinity.
26	M	
27	TU	
28	W	[Registrarships.
29	TH	Last day for applications for Medical and Surgical
30	F	Saint Andrew.

Royal College of Surgeons' Primary and Pass Examinations during this Month.

* *Applications for these appointments to be made to the Secretary, by letter, stating the Student's qualifications, the offices which he has previously held in the Hospital and the number of Maternity Cases attended.*

DECEMBER, 1883.

1	S	Princess of Wales born, 1844.
2	S	Advent Sunday.
3	M	Univ. Lond. M.D. and M.S. [Assist. commence duty.
4	Tu	House Phys. and Surgns., Asst. do., R. A. and Ophth.
5	W	Last day for applications for Clinical Clerkships and
6	Th	[Dresserships.
7	F	
8	S	
9	S	Second Sunday in Advent.
10	M	
11	Tu	
12	W	Meeting to appoint Clinical Clerks and Dressers.
13	Th	
14	F	
15	S	
16	S	Third Sunday in Advent.
17	M	1st Sessional Examination commences.
18	Tu	
19	W	
20	Th	
21	F	Saint Thomas.
22	S	
23	S	Fourth Sunday in Advent.
24	M	
25	Tu	Christmas Day.
26	W	
27	Th	
28	F	
29	S	Last day for Certs. for Matric. Univ. Lond.
30	S	Sunday after Christmas.
31	M	

JANUARY, 1884.

1	TU	Vacation terminates, and Lectures re-commence.
2	W	Clinical Clerks and Dressers commence duty.
3	TH	
4	F	
5	S	
6	S	Epiphany.
7	M	Lond. Univ. Matric.
8	TU	
9	W	
10	TH	
11	F	
12	S	
13	S	First Sunday after Epiphany.
14	M	
15	TU	
16	W	
17	TH	
18	F	
19	S	
20	S	Second Sunday after Epiphany.
21	M	
22	TU	
23	W	
24	TH	
25	F	
26	S	
27	S	Third Sunday after Epiphany.
28	M	
29	TU	
30	W	
31	TH	

*Royal College of Surgeons' Primary and Pass Examinations during this month.
The Registration and Museum Committees meet during this month.*

FEBRUARY, 1884.

1	F	
2	S	
3	S	Fourth Sunday after Epiphany.
4	M	Matric. Pass List Univ. Lond. published.
5	Tu	[Surgns., of Asst. Surgns., and of R.A.*
6	W	Last day for applications for offices of House Phys. and
7	Th	
8	F	
9	S	
10	S	Septuagesima Sunday. Queen Victoria married, 1840.
11	M	Classified Matric. List Univ. Lond. published.
12	Tu	
13	W	Meeting to appoint House Officers, &c.
14	Th	
15	F	
16	S	
17	S	Sexagesima Sunday.
18	M	
19	Tu	
20	W	
21	Th	
22	F	
23	S	
24	S	Quinquagesima Sunday.
25	M	
26	Tu	
27	W	Ash Wednesday.
28	Th	
29	F	

* Applications for these appointments to be made to the Secretary, by letter, stating the Student's qualifications, the offices which he has previously held in the Hospital, and the number of Maternity Cases attended.

MARCH, 1884.

1	S	St. David.
2	S	First Sunday in Lent.
3	M	[commence duty.
4	TU	House Physns. and Surgns., and Asst. do., also R. A.
5	W	Last day for applications for appointments of Clinical
6	TH	[Clerks and Dressers.
7	F	
8	S	
9	S	Second Sunday in Lent.
10	M	Prince of Wales married, 1863.
11	TU	
12	W	Meeting to select Clinical Clerks and Dressers.
13	TH	
14	F	
15	S	
16	S	Third Sunday in Lent.
17	M	
18	TU	
19	W	
20	TH	
21	F	
22	S	
23	S	Fourth Sunday in Lent.
24	M	Sessional Examination commences.
25	TU	
26	W	
27	TH	
28	F	
29	S	
30	S	Fifth Sunday in Lent.
31	M	{Registrar's Report for last year due. Last Day for Reports for Solly Medal, 1884.

APRIL, 1884.

1	TU	Clinical Clerks and Dressers commence duty.
2	W	
3	TH	
4	F	
5	S	
6	S	Palm Sunday.
7	M	
8	TU	Fire Insurance Office.
9	W	
10	TH	
11	F	Good Friday.
12	S	
13	S	Easter Sunday.
14	M	Bank Holiday.
15	TU	
16	W	
17	TH	
18	F	
19	S	
20	S	Low Sunday.
21	M	
22	TU	
23	W	
24	TH	
25	F	
26	S	
27	S	Second Sunday after Easter.
28	M	
29	TU	
30	W	

Royal College of Surgeons' Primary and Pass Examinations during this month.

The Examinations for the Mead and Cheselden Medals take place this month.

The Annual Inspection of the Museum and meeting of Museum Committee take place during this month.

The Registration Committee meets during this month.

Preliminary Examination in Arts of Apothecaries Society held this month.

MAY, 1884.

1	TH	Summer Session commences.
2	F	
3	S	
4	S	Third Sunday after Easter. [and Surgns., and Asst. do., of R. A., & Ophth. Asst.* Last day for applications for offices of House Phys.
5	M	
6	TU	
7	W	
8	TH	
9	F	
10	S	
11	S	Fourth Sunday after Easter. [H.M. the Queen, 1868. First Stone of St. Thomas's New Hospital laid by Meeting to appoint House Officers, R. A. and Ophth. [Asst.
12	M	
13	TU	
14	W	
15	TH	
16	F	
17	S	
18	S	Rogation Sunday.
19	M	
20	TU	
21	W	Ascension Day.
22	TH	
23	F	
24	S	Queen Victoria born, 1819.
25	S	Sunday after Ascension.
26	M	
27	TU	
28	W	
29	TH	
30	F	
31	S	

Royal College of Surgeons' Primary and Pass Examinations during this Month.

* Applications for these appointments to be made to the Secretary, by letter, stating the Student's qualifications, the offices which he has previously held in the Hospital, and the number of Maternity Cases attended.

JUNE, 1884.

1	S	Whit Sunday.
2	M	Bank Holiday. [Ophth. Asst. commence duty.
3	Tu	House Phys. and Surgns., and Asst. do., R. A. and
4	W	Last day for applications for appointments of Clinical
5	Th	[Clerks and Dressers.
6	F	
7	S	
8	S	Trinity Sunday.
9	M	
10	Tu	
11	W	Meeting to select Clinical Clerks and Dressers.
12	Th	
13	F	
14	S	
15	S	First Sunday after Trinity.
16	M	
17	Tu	
18	W	Matriculation Lond. Univ.
19	Th	
20	F	
21	S	New St. Thomas's Hospital opened by H. M. the Queen, [1871.
22	S	Second Sunday after Trinity.
23	M	
24	Tu	Midsummer Day.
25	W	
26	Th	
27	F	
28	S	Queen Victoria crowned, 1838.
29	S	Third Sunday after Trinity.
30	M	

The Harveian Oration is delivered at the Royal College of Physicians annually in the month of June.

Doctor of Science Examination at London University takes place within the first 21 days of June.

Distribution of Prizes for past Sessions during this month.

JULY, 1884.

1	TU	Clinical Clerks and Dressers commence duty.
2	W	
3	TH	
4	F	
5	S	
6	S	Fourth Sunday after Trinity.
7	M	
8	TU	[Officers for September.
9	W	Last day for applications for appointment of House
10	TH	
11	F	
12	S	Fire Insurance Office.
13	S	Fifth Sunday after Trinity.
14	M	Preliminary Science London University Examination.
15	TU	
16	W	Meeting to appoint House Officers for September.
17	TH	
18	F	
19	S	
20	S	Sixth Sunday after Trinity.
21	M	
22	TU	
23	W	
24	TH	
25	F	
26	S	
27	S	Seventh Sunday after Trinity.
28	M	Sessional Examination commences.
29	TU	
30	W	
31	TH	

*Royal College of Surgeons' Primary and Pass Examinations during this Month.
The Registration and Museum Committees meet during this month.*

AUGUST, 1884.

1	F	
2	S	
3	S	Eighth Sunday after Trinity. Bank Holiday.
4	M	
5	Tu	
6	W	
7	Th	
8	F	
9	S	
10	S	Ninth Sunday after Trinity.
11	M	
12	Tu	
13	W	
14	Th	
15	F	
16	S	
17	S	Tenth Sunday after Trinity.
18	M	
19	Tu	
20	W	
21	Th	
22	F	
23	S	
24	S	Eleventh Sunday after Trinity.
25	M	
26	Tu	
27	W	
28	Th	
29	F	
30	S	
31	S	Twelfth Sunday after Trinity.

SEPTEMBER, 1884.

1	M	[commence duty.
2	TU	House Phys. and Surgns., and Asst. do., also R. A.
3	W	Last day for applications for appointments of Ward
4	TH	[Clerks, Clinical Clerks, and Dressers.
5	F	
6	S	
7	S	Thirteenth Sunday after Trinity.
8	M	
9	TU	
10	W	Meeting to appoint Clerks and Dressers.
11	TH	
12	F	
13	S	
14	S	Fourteenth Sunday after Trinity.
15	M	
16	TU	
17	W	
18	TH	
19	F	
20	S	
21	S	Fifteenth Sunday after Trinity.
22	M	
23	TU	
24	W	
25	TH	
26	F	[1885, to be awarded in 1886.
27	S	Announcement of subject and date for Grainger Prize,
28	S	Sixteenth Sunday after Trinity.
29	M	Michaelmas Day.
30	TU	

Royal College of Surgeons' and Apothecaries' Hall Preliminary Examinations in General Knowledge this month.

LIST OF STUDENTS

WHO HAVE OBTAINED

Honours in the Annual Examinations.

*w refers to Winter and s to Summer Session.**The Addresses are those given at the time of Entry.***ACLAND (T. D.),* Oxford.**w 1877-8. 3rd Year Physical Society's Prize.
Paper published in Hospital Reports, Vol. VIII.

w 1878-9. 4th Year Student. The Mead Medal.

ADDY (B.), West Deeping, Lincolnshire.

1869. 1st Year Student, 1st College Prize;

Physical Society's 1st Year's Prize.

1870. 2nd Year Student, 1st Coll. Prize;

Physical Society's 2nd Year's Prize.

1871. 3rd Year Student, 1st Coll. Prize;

Prosecutor's Prize;

Treasurer's Gold Medal.

ALLINGHAM (W.),† Bermondsey.1852. Descriptive Anatomy, Hon. Cert. ;
Chemistry, Hon. Cert.

1853. Midwifery, Hon. Cert.

1854. Medicine, Hon. Cert. ;

Descriptive Anatomy, Prize ;

Midwifery, Hon. Cert. ;

Physical Society's Essay, Prize ;

Surgery, Prize ;

Physiology, Hon. Cert.

1855. Medicine, Prize ;

Descriptive Anatomy, Hon. Cert. ;

Physiology, Hon. Cert. ;

Clinical Medicine, President's Prize ;

Clinical Medicine, Treasurer's Prize.

ANDERSON (W.),‡ Clapham, Surrey.

1865. 1st Year Student, 3rd Coll. Prize.

1866. 2nd Year Student, 3rd Coll. Prize.

1867. 3rd Year Student, 1st Coll. Prize ;

Physical Society's 3rd Year's Prize ;

Cheselden Medal.

ARMSTRONG (H. G.), Reading.

s 1872. 1st Year Student, Hon. Cert.

w 1874. 3rd Year Student, 3rd Coll. Prize.

* Demonstrator in Physiology and in Practical Physiology.

† Late Surgical Tutor, Surgeon to Great Northern Hospital, Surgeon to St. Mark's Hospital.

‡ Assistant Surgeon to, and Joint Lecturer on Anatomy, Examiner in Anatomy and Physiology, Royal College of Physicians, formerly Demonstrator of Anatomy, and Surgical Registrar at St. Thomas's Hospital, late Medical Officer to H.B.M. Legation in Japan, and Professor of Medical Sciences at the Japanese Naval Medical College, Tokyo.

ATKINSON (F. P.), Kew.

1861. 1st Year Matriculation Examination—Classics and Mathematics, Hon. Cert.

ATKINSON (J.), Kirkby-Lonsdale.

1853. Chemistry, Hon. Cert.

AVELING (C. T.), Shacklewell.

1863. Matriculation Examination—Physics and Natural History, 1st College Prize ;

1st Year Student, 1st College Prize.

1864. 2nd Year Student, 2nd College Prize.

1865. 3rd Year Student, 3rd College Prize.

BAILEY (J. H. T.), Greenwich.

1843. Materia Medica, Hon. Cert.

BAIN (J.)

1855. Midwifery, Hon. Cert.

BALLANCE (C. A.),§ Lower Clapton.

w 1875-6. 1st Year Student, Hon. Cert.

w 1876-7. 3rd Year Student, 3rd College Prize, and Physical Society's 3rd Year's Prize ;

1880. The Solly Medal and Prize.

BARKER (F. R.), Aldershot.

w 1875. Prosecutor's Prize.

BARRON (H. J.), Guilford Street, Russell Square.

w 1877-8. 2nd Year Student, Prosecutor's Prize.

BARWELL (R.),|| Norwich.

1847. Medicine, Hon. Cert. ;

Midwifery, Hon. Cert.

1848. Physical Society's Essay, Treasurer's Prize ;

Physiology and Anatomy, Hon. Cert. ;

Midwifery, Hon. Cert. ;

Dresser's Surg. Repts., Hon. Cert.

1850. Clinical Medicine, Prize.

BATESON (J. M.), Kirkby-Lonsdale.

1855. Chemistry, Hon. Cert.

BATTLE (W. H.),¶ Hanworth, Lincolnshire.

s 1874. Hon. Cert.

w 1875. 2nd Year Student, 3rd College Prize.

w 1876-7. 3rd Year Student, The First Solly Medal and Prize.

§ Assistant Surgeon to the West London Hospital.

|| Surgeon to Charing Cross Hospital.

¶ Surgical Registrar to St. Thomas's Hospital.

BEAL (P.), Plymouth.
1844. Chemistrv. 2nd Prize.*

BEARDSLEY (A.), Shipley, Derby.
1843. Midwifery, 2nd Prize.

BEDFORD (R. J.),* Sleaford.
1858. Midwifery, Hon. Cert.

BENWELL (H. D.), Greenwich.
1843. Chemistry, 2nd Prize.
1845. Physiology and Anatomy, Medal.
1847. Clinical Medical Reports, Prize;
Gen. Proficiency, Trea. Medal.

BELL (C. N.), Rochester.
1867. 3rd Year Student, 3rd Coll. Prize.

BELL (J. V.), Rochester.
1859. 1st Year Student, Treasurer's 2nd
Prize; Matriculation Examination—
Classics and Mathematics, Hon. Cert.
1860. 2nd Year Student, Hon. Cert.
1861. 3rd Year Student, 3rd Coll. Prize.

BERNAYS (H. L.), Chatham.
w 1873. Prosector's Prize.

BERNAYS (A. V.), Great Stanmore.
s 1876. 1st Year Student, Hon. Cert.
w 1880-81. 3rd Year Student, 1st Coll. Prize.

BICKLE (L. W.), St. Leonard's-on-
Sea.
s 1878. 1st Year Student, 3rd Coll. Prize;
s 1879. 2nd Year Student, 1st Coll. Prize.

BIDDLE (D.), Wotton-under-Edge.
1860. 1st Year Student, Trea. Prize;
Matriculation Exam.—Prize.
1861. 2nd Year Student, Hon. Cert.
1862. 3rd Year Student, Hon. Cert.

BIRTWELL (H. H.), Enfield, Lanca-
shire.
1865. 3rd Year Student, Hon. Cert.

BLACK (J.), Kentish Town.
w 1872. 2nd Year Student, Prosector's Prize.

BLACK (W. S.), Chesterfield, Derby.
1855. Midwifery, Hon. Cert.;
Medicine, Hon. Cert.

BLACKETT (W. C.), Durham.
1851. Descriptive Anatomy, Hon. Cert.

BLADES (C. C.)
1855. Midwifery, Hon. Cert.

BONE (W.), Camberwell.
1857. 1st Year Student, Trea. 1st Prize.
1858. 2nd Year Student, Trea. 1st Prize.

BONSER (J. H.), Sutton-in-Ashfield.
1871. 3rd Year Student, 2nd Coll. Prize;
Cheselden Medal.

BOULGER (J.), Gravesend.
1870. 1st Year Student, Sir Wm. Tite's
Scholarship.
1871. 2nd Year, Sir W. Tite's Scholarship.
w 1872. 3rd Year, Sir W. Tite's Scholarship.

* Late Assistant-Surgeon at the "Dread-
nought" Hospital Ship.

BOWEN (E.), Llyn, Gwair, Pem-
broke.

1847. Descriptive and Surgical Anatomy,
Hon. Cert.;
Materia Medica, Hon. Cert.

1848. Descriptive and Surgical Anatomy,
Hon. Cert.;
Physiology and Anatomy, Hon.
Cert.;
Botany, Hon. Cert.;
Comparative Anatomy, Hon. Cert.

BOWN (J. Y.), America.

1848. Descriptive and Surgical Anatomy,
Hon. Cert.

BRAKE (J.), Holt, Wilts.

1851. Matriculation Scholarship, Hon.
Cert.;

Descriptive Anatomy, Hon. Cert.;
1st Year Student, Scholarship;
Chemistry, Hon. Cert.

1852. 2nd Year Student, Scholarship;
Physiology, Prize;
Materia Medica, Hon. Cert.
Botany, Hon. Cert.;
Medicine, Hon. Cert.

1853. 3rd Year Student, Scholarship;
Clinical Medicine, Trea. Prize;
Midwifery, Prize;
Forensic Medicine, Prize.

BRISTOWE (J. S.),† Camberwell.

1847. Medicine, Hon. Cert.;
Physiology and Anatomy, Hon.
Cert.;

Descriptive and Surgical Anatomy
Prize.

1848. Descriptive and Surgical Anatomy,
Hon. Cert.;

Physiology and Anatomy, Prize;
Practical Chemistry, Prize;
Botany, Prize;
Midwifery, Hon. Cert.;

Comparative Anatomy, Prize;
Surgery, Prize;
General Proficiency, Treasurer's
Medal.

BRITTON (T.), Doncaster.

1861. 1st Year Student, Hon. Cert.

BROCK (J.), Northwich.

w 1872. 1st Year Student, 2nd Coll. Prize.
s 1872. Hon. Cert.

BROWN (F. G.), London.

1860. 1st Year Student, Hon. Cert.
1861. 2nd Year Student, 3rd Coll. Prize.
1862. 3rd Year Student, 3rd Coll. Prize.

BROWN (G. D.), Croydon.

1851. Physiology, Hon. Cert.;
Botany, Prize;

Surgery, Hon. Cert.;

1852. Physiology, Hon. Cert.;
Physical Society's Essay, Trea-
surer's Prize;
Medicine, Hon. Cert.;

Pathology, Prize.

BROWN (T. J. E.), Dorchester.

1848. Practical Midwifery, Hon. Cert.

BUCKNILL (E. R.), Bedford.

1855. 1st Year Student, Scholarship;
Midwifery, Hon. Cert.;

† Physician to and Joint Lecturer on
Medicine at St. Thomas's Hospital. Late
Lecturer on General Pathology.

Chemistry, Hon. Cert.;
Descriptive Anatomy, Hon. Cert.;
Materia Medica, Hon. Cert.

BULL (J.), Norwood, Surrey.
1848. Midwifery, Hon. Cert.

BUTLER (W.), Stoke Newington.
1845. Materia Medica, Hon. Cert.

CAIGER (F. F.), Gloucester-st., S.W.
w 1879-80. 1st Year Student, 3rd Coll. Prize.
w 1880-81. 2nd Year Student, 3rd Coll. Prize.
w 1882-83. 4th Year, the Mead Medal.

CANN (R. T.), Plymouth.
s 1882. 2nd Year, 1st Coll. Prize.

CARPENTER (A.),* Rothwell.
1848. Descriptive and Surgical Anatomy, Hon. Cert.;
Chemistry Prize;
Materia Medica, Hon. Cert.;
Matriculation Scholarship, Prize.
1849. Physiology Hon. Cert.;
Midwifery, Hon. Cert.;
Descriptive Anatomy, 1st Prize;
Medicine, 2nd Prize.
850. Physiology, Hon. Cert.;
Descriptive Anatomy, Hon. Cert.;
Botany, Prize;
Medicine, Prize;
Surgery, Prize; [Medal.
General Proficiency, Treasurer's
1851. (Accoucheur) Midwifery, Prize;
Essay on Chorea, Mr. N. Smith's
Prize.
1852. Surgical Reports, President's Prize;
Medical Reports, Dr. Roots' Prize;
Ophthalmic Reports, a Governor's Prize;
Clinical Medicine, Senior Prize.

CARPENTER (A. B.), Croydon.
w 1876-7. 1st Year Student, Hon. Cert.;

CARPENTER (G. A.), Streatham.
w. 1880-81. 1st Year Student, 3rd Coll. Prize.
s 1881. 1st Coll. Prize.
w 1881-2. 2nd Year, 3rd Coll. Prize.
Prosecutor's Prize.

CARR (J. T.), Bombay.
1844. Surgery, Prize.

CASTLE (H.), Newport, I. of Wight.
w 1874-5. 1st Year Student, 2nd Coll. Prize.
s 1875. 3rd College Prize.
w 1876-7. Physical Society's 3rd Year's Prize.

CAULDE (A. W. W.), Henfield, Sussex.
1858. Clinical Medicine, Prize.

CHALDECOTT (C. W.), Dorking.
1849. Descriptive Anatomy, Hon. Cert.;
Chemistry, Hon. Cert.;
Materia Medica, 2nd Prize;
1st Year Student, Scholarship.
1850. Physiology, Hon. Cert.
Surgery, Prize.
1851. Physiology, Prize;
Descriptive Anatomy, Hon. Cert.;
Medicine, Hon. Cert.;
Physical Society's Essay, Treasurer's Prize;
Surgery, Hon. Cert.;
General Proficiency, Treasurer's
Silver Medal.

CHALDECOTT (T. A.), Newington.

1848. Descriptive Surgical Anatomy, Hon.
Chemistry, Hon. Cert.; [Cert.;
Botany, Hon. Cert.;
Materia Medica, Hon. Cert.
Comparative Anat., Hon. Cert.;
Matriculation Scholarship, Prize;
Practical Chemistry Hon. Cert.
1849. Physiology, Hon. Cert.;
Midwifery, Hon. Cert.;
Surgery, 2nd Prize;
Medicine, Hon. Cert.
1850. Physiology, Hon. Cert.;
Forensic Medicine, Prize;
Pathology, Prize;
Medicine, Hon. Cert.;
Surgery, Hon. Cert.

CHAPMAN (C. E.), Preston.
1855. Midwifery, Hon. Cert.;
Materia Medica, Hon. Cert.

1857. Clinical Assistant, Prize;
Physical Society's Essay, Prize.

CHARPENTIER (A. E.),
1882-3. 4th Year, The Mead Medal Exam.,
Special Mention and Hon. Cert.

CHERRY (A. H.), Clapham.
1845. Clinical Medicine, Hon. Cert.

CHIPPERFIELD (W. N.), Reading.
1852. 1st Year Student, Scholarship;
Descriptive Anatomy, Prize.
1853. 2nd Year Student, Scholarship;
Physiology, Prize;
Descriptive Anatomy, Prize;
Midwifery, Prize;
Physical Society's Essay, Prize;
Medicine, Prize;
Surgery, Prize.
1854. 3rd Year Student, Scholarship.
Medicine, Prize;
Descriptive Anatomy, Hon. Cert.
Midwifery, Prize;
Physical Society's Essay, Treasurer's Prize;
Forensic Medicine, Prize;
Chemistry, Hon. Cert.;
Comparative Anatomy, Prize;
Pathology, Prize;
Surgery and Surgical Anatomy,
Cheselden Medal;
Clinical Medicine, Treasurer's Prize;
Physiology, Prize; [Medal.
General Proficiency, Treasurer's

CLAPTON (E.),† Stamford.

1851. Matriculation Scholarship, Hon.
Cert.
1st Year Student, 1st Scholarship;
Descriptive Anatomy, Prize;
Chemistry, Prize.
1852. 2nd Year Student, Scholarship;
Physiology, Prize
Materia Medica, Prize;
Botany, Prize;
Medicine, Hon. Cert.
1853. 3rd Year Student, Scholarship;
Physiology, Hon. Cert.; [Prize;
Clinical Medicine, Treasurer's
Midwifery, Hon. Cert.;
Physical Society's Essay, Treasurer's
Prize;
Medicine, Hon. Cert.;

* Lecturer on State Medicine at St. Thomas's Hospital.

† Late Physician to and Lecturer on Materia Medica at St. Thomas's Hospital. Physician to the Magdalen Hospital.

- Forensic Medicine, Hon. Cert.;
Chemistry, Hon. Cert.;
Surgery, Hon. Cert.
1854. Ophthalmic Reports, Governor's Prize;
Clinical Medicine, Mr. N. Smith's Prize.
- CLAPTON (W.), Stamford.**
1855. Midwifery, Hon. Cert.;
Descriptive Anatomy, Hon. Cert.;
Materia Medica, Prize.
1856. Clinical Medicine, Prize.
1858. Midwifery, Hon. Cert.
- CLARKE (A.), Dorking.**
1856. 1st Year Student, Treasurer's 2nd Prize.
- CLARK (J. H.), Jamaica.**
1867. 2nd Year Student, Physical Society's 2nd Year's Prize.
- CLARKSON (J. W.), Surbiton.**
w 1872. 2nd Year Student, 3rd Coll. Prize.
w 1873. 3rd Year Student, 2nd Coll. Prize;
Surgery and Surgical Anatomy, Hon. Cert.
- CLEGHORN (G.), Bedford.**
1872. 3rd Year Student, Hon. Cert.
- CLEGGINS (T.), Hayford, Woodstock.**
1847. Chemistry, Hon. Cert.
1848. Descriptive and Surgical Anatomy, Hon. Cert.;
Midwifery, Hon. Cert.
1849. Midwifery, Hon. Cert.;
Medicine, Hon. Cert.
1850. Surgical Reports, Prize;
(Accoucheur) Midwifery, Hon. Cert.
- COLBY (W. T.), Malton, York.**
1849. Descriptive Anatomy, Hon. Cert.;
Midwifery, Hon. Cert.
- COLLIER (T. P.), Worship Square.**
1847. Practical Midwifery, Prize.
- COMPLIN (E. J.), Charterhouse Square.**
1851. Clinical Medicine, Prize;
Medical Cases, President's Prize;
Surgery, Hon. Cert.
1852. Midwifery, Hon. Cert.;
Pathology, Hon. Cert.
- COOK (W.), Gainsboro'.**
1844. Chemistry, Hon. Cert.;
Materia Medica, Hon. Cert.
- COOKE (J.), Stamford.**
1855. Comparative Anatomy, Prize;
Midwifery, Hon. Cert.;
Physiology, Hon. Cert.
- CORY (R.),* Carlisle.**
1870. Physical Society's 3rd Year's Prize.
- COUSINS (J. W.), Portsea.**
1864. Descriptive Anatomy, Hon. Cert.;
Chemistry, Hon. Cert.
1855. Surgery, Prize;
Midwifery, Prize;
Midwifery, Hon. Cert.
1856. Clinical Medicine, Prize;
Surgery and Surgical Anatomy, Cheselden Medal.
- COWEN (P.), Kennington.**
1862. 1st Year Student, 2nd Coll. Prize.
1863. 2nd Year Student, 2nd Coll. Prize.
1864. 3rd Year Student, 2nd Coll. Prize.
- COX (E.), Maiden Newton, Dorsetshire.**
1866. 1st Year Student, 3rd Coll. Prize.
1868. 3rd Year Student, 2nd Coll. Prize.
- COXWELL (C. F.), Brighton.**
1880. 4th Year Student, the Mead Medal.
- CRICK (S. A.), Cosby-hill, Leicestershire.**
s 1875. 1st Year Student, Hon. Cert.
w 1875-6. Prosecutor's Prize.
w 1876-7. 3rd Year Student, 3rd Coll. Prize.
- CROFT (J.),† Clapton.**
1851. Descriptive Anatomy, Hon. Cert.
1853. Midwifery, Hon. Cert.
- CROFTS (W. C.), Rowston, Lincoln.**
1855. Surgery, Hon. Cert.;
Midwifery, Hon. Cert.
- CROSBY (T. B.), Gosberton, Lincoln.**
1851. Physiology, Prize;
Descriptive Anatomy, Prize;
Medicine, Prize;
Surgery, Prize.
1852. Physiology, Prize;
Descriptive Anatomy, Hon. Cert.;
Medicine, Hon. Cert.;
Forensic Medicine, Prize;
Practical Chemistry, Prize;
Surgery, Hon. Cert.;
Surgery and Surgical Anatomy, Bronze Cheselden Medal;
Comparative Anatomy, Prize.
- CROSSMAN (J.), Redruth.**
1871. Physical Society's 1st Year's Prize.
1872. Physical Society's 2nd Year's Prize.
1873. Physical Society's 3rd Year's Prize.
- DAVIES (D.), Carmarthenshire.**
1843. Chemistry, 1st Prize;
Midwifery, Hon. Cert.;
Materia Medica, Prize.
1844. Medicine, Hon. Cert.;
Physiology and Anatomy, Hon. Cert.
1845. Clinical Surgical Reports, Medal.
- DAVIES (D. S.), Bristol.**
1875-6. Physical Society's 1st Year's Prize.
- DAY (W. H.), Norwich.**
1844. Surgery, Prize;
Physical Society's Essay, Hon. Cert.;
Dresser's Clinical Surgery, Prize.
- DECK (J. F.), Nelson, New Zealand.**
1860. 1st Year Student, 1st Coll. Prize.
1861. 2nd Year Student, 1st Coll. Prize;
Physical Society's Prize.
1862. 3rd Year Student, 1st Coll. Prize;
Physical Society's Prize;
Cheselden Medal;
Treasurer's Gold Medal.

* Assistant Obstetric Physician to and Joint Lecturer on Forensic Medicine at St. Thomas's Hospital.

† Surgeon to and Lecturer on Clinical Surgery at St. Thomas's Hospital; late Assistant Demonstrator of Anatomy. Surgeon to the Magdalen Hospital.

DICKERSON (S. H.), Hartest, Suffolk.

1853. Physiology, Hon. Cert.;
Materia Medica, Hon. Cert.;
Midwifery, Hon. Cert.;
Medicine, Hon. Cert.

DIXON (E. L.), Preston, Lancashire.

1852. 1st Year Student, Scholarship;
Chemistry, Hon. Cert.
1853. 2nd Year Student, Scholarship;
Physiology, Hon. Cert.;
Materia Medica, Prize;
Descriptive Anatomy, Hon. Cert.;
Midwifery, Hon. Cert.;
Botany, Prize;
Medicine, Hon. Cert.
1854. 3rd Year Student, Scholarship;
Descriptive Anatomy, Hon. Cert.;
Practical Chemistry, Prize;
Physiology, Hon. Cert.

DOBSON (N. C.), *Holbeach, Lincolnshire.

1865. 1st Year Student, 1st Coll. Prize.
1866. 2nd Year Student, 1st Coll. Prize.
1867. 3rd Year Student, 2nd Coll. Prize;
A Prize and Hon. Cert. for Proficiency in Surgery and Surgical Anatomy at the Cheselden Medal Examination;
Treasurer's Gold Medal.

DRAKE (A. J.), Kingsclere, Hants.

1870. 3rd Year Student, 1st Coll. Prize.

DRAKE (C. H.), Kingsclere, Hants.

1857. 1st Year Student, Hon. Cert.;
1858. 2nd Year Student, Treasurer's 1st Prize;
Clinical Medicine, 2nd Prize.
1859. 3rd Year Student, Hon. Cert.;
Surgery and Surgical Anatomy, Cheselden Medal;
General Proficiency, Treasurer's Medal.

DRAKE (T.), Kingsclere, Hants.

1858. 2nd Year Student, Treasurer's 1st Prize;
1859. 2nd Year Student, President's Prize.
1860. 3rd Year, 1st College Prize;
Surgery and Surgical Anatomy, Cheselden Medal;
General Proficiency, Treasurer's Medal.

DREW (G. F. A.), Plymouth.

1848. Descriptive and Surgical Anatomy, Prize;
Chemistry, Hon. Cert.;
Botany, Prize;
Comparative Anatomy, Hon. Cert.;
Practical Chemistry, Prize;
Gen. Proficiency, Hon. Cert.
1849. Physiology, 2nd Prize;
Midwifery, Hon. Cert.;
Descriptive Anatomy, Hon. Cert.;
Medicine, Hon. Cert.
1850. Physiology, Prize;
Descriptive Anatomy, Hon. Cert.;
Medicine, Hon. Cert.;
Surgery, Hon. Cert.

DUKES (C.), Dalston.

1865. 1st Year Student, Hon. Cert.
1867. 3rd Year Student, Hon. Cert.;
Prosecutor's Prize and Hon. Cert.

DUNCAN (H.), London.

- w 1832-3. 1st Entrance Science Scholarship;
1st Coll. Prize.

DUNCAN (W. A.), Manchester.

- w 1876-7. 1st Year Student, The William Tite Scholarship.
s 1877. 1st College Prize.
w 1877-8. 2nd Year Student, The Musgrove Scholarship.
w 1877-8. 2nd Year Physical Society's Prize.
s 1878. 1st College Prize.
w 1878-9. 2nd Tenure Musgrove Scholarship.
1st College Prize;
3rd Year Physical Society's Prize;
Grainger Testimonial Prize.
1880. 4th Year Student, The Cheselden Medal.
The Treasurer's Medal.
w 1881-2. The Solly Medal and Prize.

DUNMAN (G.), Camberwell.

1852. Chemistry, Hon. Cert.
1854. Midwifery, Hon. Cert.

DYER (F. J.), Blackheath.

1847. Chemistry, Prize;
Materia Medica, Hon. Cert.;
1849. Physiology, Hon. Cert.;
Midwifery, 2nd Prize;
Medicine, Hon. Cert.

EDDOWES (J. H.), Loughboro'.

1843. Physiology and Anatomy, Hon. Cert.;
Chemistry, Hon. Cert.;
Comparative Anatomy, Prize.
1844. Physiology and Anatomy, Hon. Cert.;
Clinical Medical Reports, Silver Medal.
1845. Clinical Medicine, Prize.

EDDOWES (W. D.), Loughboro'.

1845. Descriptive and Surgical Anatomy, Prize.

EDMONDS (S.), St. Helen's, Lancashire.

1852. Chemistry, Hon. Cert.
1853. Midwifery, Hon. Cert.;
Medicine, Hon. Cert.;
Surgery, Hon. Cert.
1854. Surgery and Surgical Anatomy, Hon. Cert.;
Clinical Medicine, Treas. Prize;
Clinical Medicine, Pres. Prize.
1855. Surgical Reports, Pres. Prize;
Clinical Medicine, Dr. Roots' Prize.

EDWARDS (S.), Littlehampton.

1855. Midwifery, Hon. Cert.

EDWARDS (V.), Woodbridge, Suffolk.

1843. Surgery, Prize.

ELBOROUGH (P. J.), Herne Bay.

1845. Chemistry, Hon. Cert.
1847. Medicine, Hon. Cert.;
Midwifery, Prize.
1848. Medicine, Hon. Cert.;
Surgery, Hon. Cert.;
Surgical Report, Pres. Prize.

* Surgeon to the Bristol General Hospital and Lecturer on Anatomy at the Bristol Medical School.

ELLIS (J.), Portsea, Hants.
1857. Clinical Assistant (Medicine), Hon. Cert.

ELWIN (C. J.), London.
1855. Practical Midwifery, Prize.

EVANS (C. W. DE LACEY), Bangor.
w 1876-7. 3rd Year Student, The Solly Prize and Hon. Cert.

FAIRBANK (J.), Islington.
1865. 1st Year Student, Hon. Cert.
1866. 2nd Year Student, Prosec. Prize.

FARRANT (S.), Collumpton, Devon.
1859. 2nd Year Student, Hon. Cert.
1860. 3rd Year Student, Hon. Cert.

FAULKNER (R.), Camberwell.
1844. Botany, Prize;
Clinical Medical Reports, Hon. Cert.

FELL (W.), Kensington.
w 1878-9. 2nd Year Student Prosector Prize.

FENTON (H. A. H.), Westminster.
s 1875-6. 1st Entrance Science Scholarship.
s 1876. 1st Year Student, 1st College Prize.

FERNIE (A.), Yeldon, Beds.
1853. Physiology, Hon. Cert.;
Surgery, Hon. Cert.

FERNIE (W. T.), Yeldon, Beds.
1852. Practical Midwifery, Prize;
Midwifery, Hon. Cert.

FISHER (T.), St. Michael's.
s 1872. 1st Year Student, Hon. Cert.
s 1873. 2nd Year Student, 2nd College Prize.
w 1874. 2nd Year Student, 3rd College Prize.
w 1875. 3rd Year Student, Surgery and Surgical Anatomy, Prize, and Cert. of Hon.

FORD (G. W.), Cape of Good Hope.
w. 1880-81. 3rd Year Student, Prosector's Prize.

FOWLER (J. T.), Winterton, Lincoln.
1854. Chemistry, Hon. Cert.
1855. Botany, Hon. Cert.

FOWLER (J.), Winterton, Lincoln.
1859. 1st Year Student, Hon. Cert.
1860. 2nd Year Student, 2nd College Prize.
1861. 3rd Year Student, 2nd College Prize.

FREEMAN (D.), Kennington.
1859. Clinical Medicine, Prize.

FREEMAN (A. J.), Southsea, Hants.
1865. 3rd Year Student, Hon. Cert.

FULTON (J. A.), Stockwell.
1852. Botany, Hon. Cert.
1853. Practical Chemistry, Prize.

FURNIVAL (F. H.), Nottingham.
w 1878-9. 1st Year Student;
The Sir Wm. Tite Scholarship.

GARDNER (E. B.), London.
1858. Matriculation Examination—Classics and Mathematics, Prize.

GARTON (W.), St. Helier's.
1870. 2nd Year Student, 2nd College Prize.
Physical Society's 2nd Year's Prize.
1871. Physical Society's 3rd Year's Prize.

GIMBLETT (J.), Taunton.
1860. 1st Year Student, Hon. Cert.

GEORGE (C. F.), Kirton-on-Lindsay.
1855. Midwifery, Hon. Cert.
1856. 2nd Year Student, Dr. Root's Prize.
1857. 3rd Year Student, Hon. Cert.;
Surgery and Surgical Anatomy.
Cheselden Medal.

GERVIS (F. H.), Tiverton.
1861. 1st Year Matriculation Scholarship.
—College Prize, 2nd College Prize.
1862. 2nd Year Student, 1st College Prize.
1863. 3rd Year Student, Hon. Cert. and Physical Society's Prize.

GERVIS (H.),* Tiverton.
1856. 1st Year Student, Treas. 1st Prize;
Matriculation Examination, Physics, &c., Prize.
1857. 2nd Year Student, Pres. Prize;
Physical Society's Essay, Prize.
1858. Clinical Assistant (Medicine), 2nd Prize;
Physical Society's Essay, Prize;
General Proficiency, Treasurer's Medal.

GILES (F. W.), Henley-on-Thames.
w 1875-6. 3rd Year Student, Hon. Cert.

GIMLETTE (G. H. D.), Southsea.
s 1874. 1st Year Student, Hon. Cert.
w 1875-6. 3rd Year Student, Hon. Cert.
w 1876-7. Physical Society's 3rd Year's Prize.

GLOVER (J. P.), Lansdowne Road.
w 1881-2. 3rd Year Student, 3rd Coll. Prize.

GODDARD (E.), London.
1860. Matriculation Examination, Classics, &c., Prize.

GODDARD (L.), London.
1856. Matriculation Examination, Classics and Mathematics, Prize.

GOODDY (E. S.), Hampstead.
w 1882-3. 2nd Year Student, 3rd Coll. Prize.

GOWLAND (W.), London.
1845. Botany, Hon. Cert.

GRABHAM (C.), Islington.
1857. Matriculation Examination, Modern Languages, Prize.

GRABHAM (G. W.),† Islington.
1855. Matriculation Examination, Scholarship;
Midwifery, Hon. Cert.;
Materia Medica, Hon. Cert.

* Obstetric Physician to, and Lecturer on Midwifery and Diseases of Women and Children. Examiner in Obstetric Medicine, University of London.

† Resident Medical Superintendent at Earlswood Asylum.

GRABHAM (J.), Rochford, Essex.

1848. Descriptive and Surgical Anatomy, Hon. Cert.;

Chemistry, Hon. Cert.;

Botany, Hon. Cert.;

Comparative Anatomy, Prize.

1850. Physiology, Hon. Cert.

1851. Physiology, Hon. Cert.;

Descriptive Anatomy, Hon. Cert.;

Forensic Medicine, Prize;

Surgery, Prize;

Midwifery, Hon. Cert.

GRABHAM (M. C.), Islington.

1860. 2nd Year Student, Hon. Cert.

1861. 3rd Year Student, Hon. Cert.

GREAVES (C. A.), Derby.

1861. 1st Year Student, Treasurer's Prize; Matriculation Examination, Hon. Cert.

1862. 2nd Year Student, 2nd College Prize; Physical Society's Prize.

1863. 3rd Year Student, 1st College Prize; Physical Society's Prize; Cheselden Medal.

GREEN (C. D.), New Cross.

w 1879-80. 1st Year Student, The Wm. Tite Scholarship.

s 1880. 3rd College Prize.

w 1880-81. 1st College Prize.

s 1882. 1st Coll. Prize.

w 1882-3. 4th Year Student, qualified for Treasurer's Gold Medal.

GREEN (J. T.), Peckham, Surrey.

1865. 1st Year Student, Physical Society's Prize.

GREEN (M. H.), Peckham.

s 1873. 1st Year Student, 2nd College Prize.

GROSE (S.), Boston, Lincoln.

1853. 2nd Year Student, Hon. Cert.

1859. Physical Society's Essay Prize.

GRIFFITHS (A. L.), London.

1859. Midwifery, Hon. Cert.

GULLIVER (G.),* Canterbury.

w 1876-7. Physical Society's 2nd Year's Prize.

GURNEY (R. A. F.), Rampton, Cambridge.

1851. Practical Midwifery, Prize.

HAGUE (S.),† Camberwell.

1863. 1st Year Student, 2nd Coll. Prize.

HAIG-BROWN (C. W.), Godalming.

s 1878. 1st Year Student, 2nd College Prize;

w 1878-9. 2nd Year Student, 2nd College

w 1880-81. The Cheselden Medal. [Prize.

HAMMERTON (E.), Elland, York.

1857. 1st Year Student, Hon. Cert.

HAMMOND (J. H.), Bridlington, York.

1850. Medical Cases, President's Prize.

HARDING (J. A.), Bath.

1859. Clinical Medicine, 2nd Prize.

1860. Clinical Assistant (Medicine), 1st Prize.

HARPER (R.), Brighton.

1844. Clinical Surgical Reports, Hon. Cert.

1845. Physical Society's Essay, Prize.

Dresser's Clinical Surgery, Prize.

HASLAM (W. F.),† Reading.

s 1876. 2nd Year Student, 1st College Prize.

w 1877-8. The Cheselden Medal.

HATCHETT (F. W.), S. Wales.

s 1880. 1st Year Student, 1st College Prize.

HATTON (G. S.), Newent, Glo'ster-shire.

w 1876-7. 2nd Year Student, Prosecutor's

HAWKINS (H. P.), Hawkhurst.

w 1882-3. 1st Year Student, The William Tite Scholarship.

HEELIS (R.), Carshalton.

s 1877. 1st Year Student, 2nd College Prize.

s 1878. 2nd Year Student, 2nd Coll. Prize.

HEIGHTON (T.), Leicester.

w 1873. 3rd Year Student, Hon. Cert.

HEWLETT (T. J.), Harrow.

1850. Matriculation Scholarship, Prize.

HEYGATE (W. N.), Harslope, Bucks.

1863. 2nd Year Student, Hon. Cert.

1864. 3rd Year Student, Hon. Cert.

HICKS (J. W.),§ Highgate New Town, N.

1852. 1st Year Student, Treasurer's 1st Prize.

1860. 2nd Year Student, 1st College Prize; Physical Society's Prize.

1861. 3rd Year Student, 1st College Prize; Physical Society's Prize;

Cheselden Medal;

Treasurer's Gold Medal.

HIGGINS (A. H.), Bermondsey.

1857. Midwifery, Hon. Cert.

HILDITCH (J.), Sandbach, Cheshire.

1857. 1st Year Student, Hon. Cert.

1858. Physical Society's Essay, Prize.

1859. Essay on Neuralgia, Mr. N. Smith's Prize.

HODGES (H. B.).

1855. Midwifery, Hon. Cert.

HODGES (R.), London.

1843. Physiology and Anatomy, Hon. Cert.;

Medicine, Hon. Cert.;

Clinical Medicine, Hon. Cert.;

Surgical Essay, Silver Medal.

HO KAI, Hong Kong, China.

w 1875-6. 1st Year Student, Hon. Cert.

s 1876. Hon. Cert.

w 1876-7. 2nd Year Student, Hon. Cert.

HOLBERTON (H. N.), Hampton.

w 1876-7. 2nd Entrance Science Scholarship, and 2nd College Prize.

w 1877-8. 2nd Year Student, 1st Coll. Prize.

HOOPER (J. H.), Upton Warren.

1858. 1st Year Student, Hon. Cert.

1859. 2nd Year Student, College Prize.

1860. 3rd Year Student, Hon. Cert.

HORTON (A. W.), Stockwell.

1851. Descriptive Anatomy, Hon. Cert.

HOWELL (T.), London.

1850. Practical Midwifery, Prize.

* Assistant Physician to St. Thomas's Hospital.

† Late Medical Registrar at St. Thomas's Hospital.

‡ Assistant Surgeon to the Birmingham General Hospital.

§ Late Lecturer on Botany at St. Thomas's Hospital; late Curator of the Museum.

HUBBARD (J. W.), Leicester.

1847. Clinical Medical Reports, Prize;
Medicine, Prize;
Physiology and Anatomy, Hon.
Cert.;
Physical Society's Essay, Treas-
urer's Prize.

HULL (W. W.), Acton.

- w 1878-9. 2nd Entrance Science Scholarship.
w 1881-2. The Mead Medal.

HUNT (J. A.), Derby.

- w 1873. 1st Year Student, Hon. Cert.
w 1874. Prosector's Prize.

HUNTER (W. F.), Margate.

1859. 1st Year Student, Hon. Cert.;
Matriculation Examination in
Classics and Mathematics, Prize;
Matriculation Examination in
Modern Languages, Prize.
1860. 2nd Year Student, 3rd Coll. Prize.
1861. 3rd Year Student, Hon. Cert.

HURMAN (H. B.), Bridgewater.

1853. Midwifery, Hon. Cert.

HUTTON (J. S.), Sevenoaks.

- w 1881-2. Entrance Science Scholarship.
2nd Coll. Prize.
s 1882. 1st Coll. Prize.

ILES (D.), Fairfield.

1863. 2nd Year Student, Hon. Cert.
1864. 3rd Year Student, Hon. Cert.

INGLIS (W. W.),* Brixton Hill.

1864. 1st Year Student, 2nd Coll. Prize.
1865. 2nd Year Student, 2nd Coll. Prize.
1866. 3rd Year Student, 3rd Coll. Prize;
Cheselden Medal.

IVES (R.)

1855. Midwifery, Hon. Cert.

JACKSON (T. C.), Rotherhithe.

1844. Materia Medica, Hon. Cert.

JACOB (E. H.), Winchester.

- w 1875-6. Physical Society's 3rd Year's
Prize.

JACOBSON (T. E.), Sleaford, Lincoln.

1852. Practical Midwifery, Prize.

JARDINE (J. L.), Brixton.

1848. Physiology and Anatomy, Hon.
Cert.
1850. Medical Reports, Dr. Roots' Prize.

JAY (M.), Wallaroo, South Australia.

- w 1877-8. 1st Year Student, 3rd Coll. Prize.
w 1878-9. 2nd Year Student, 2nd College
Prize;
Prosector's Prize.

JEFFERSON (T. J.), Hull.

1861. 2nd Year Student, Hon. Cert.
1862. 3rd Year Student, Hon. Cert.

JOHNSON (W. G.), Wandsworth.

1853. Chemistry, Hon. Cert.
1854. Midwifery, Hon. Cert.
1855. Comparative Anatomy Prize; Mid-
wifery, Hon. Cert.

JOHNSTON (G. D.).

- w 1882-3. 4th Year, Cheselden Medal.

* Late Medical Registrar at St. Thomas's
Hospital.

JONES (S.),† Cricklewood, Middlesex.

1851. Matriculation Scholarship, Prize;
Descriptive Anatomy, Hon. Cert.;
Chemistry, Hon. Cert.;
1st Year Student, Scholarship.
1852. 2nd Year Student, Scholarship;
Physiology, Hon. Cert.;
Descriptive Anatomy, Prize;
Botany, Hon. Cert.
1853. Physiology, Hon. Cert.;
Descriptive Anatomy, Hon. Cert.;
3rd Year Student, Scholarship;
Materia Medica, Hon. Cert.

**JONES (Sydney H.), George Street,
Hanover Square.**

- w 1881-2. Entrance Science Scholarship.
The Wm. Tite Scholarship.
w 1882-3. ‡ Musgrove Scholarship and 1st
Coll. Prize combined.
Prosector's Prize.

JONES (A. O.), Islington.

1862. 1st Year Student, Hon. Cert.

JONES (J.), Ilfracombe.

1863. Matriculation Examination —
Modern Languages and Modern
History, College Prize.

JONES (W. Wansbrough),‡ Leek.

- w 1877-8. 1st Year Student;
1st Entrance Science Scholarship;
£60.
The William Tite Scholarship.
w 1877-8. 1st Year Physical Society's Prize;
s 1878. 1st Year Student, 1st Coll. Prize;
w 1878-9. 2nd Year Student, The College
Scholarship;
s 1879. 2nd Year Student, 2nd Coll. Prize;
w 1879-80. 3rd Year Student, 2nd tenure of
Coll. Scholarship, and 1st Coll. Prize.
w 1880-81. The Mead Medal;
Treasurer's Gold Medal.

JOSEPH (S. W. J.), St. Leonards.

1873. Physical Society's 2nd Year Prize.

KEELE (J. T.), South Lambeth.

1853. Materia Medica, Hon. Cert.;
Midwifery, Hon. Cert.

KERAKOOSSE (J.), East Indies.

1854. Midwifery, Hon. Cert.

KEYWORTH (J. W.),§ Aston, Berks.

1848. Chemistry, Hon. Cert.;
Materia Medica, Prize;
General Proficiency, Hon. Cert.
1849. Physiology, Hon. Cert.;
Midwifery, 3rd Prize;
Medicine, Hon. Cert.;
Physical Society's Essay, Prize.
1850. Physiology, Hon. Cert.;
(Accoucheur) Midwifery, Hon. Cert.;
Ophthalmic Reports, a Governor's
Prize;
Essay on Neuralgia, Mr. Newman
Smith's Prize.

† Surgeon to, and Joint Lecturer on
Surgery at, St. Thomas's Hospital; late
Lecturer on Anatomy and Ophthalmic
Surgery.

‡ Ratcliffe Travelling Fellowship, Oxford,
1880.

§ Lecturer on Physiology at Sydenham
College, Birmingham.

1851. Comparative Anatomy, Prize;
Clinical Medicine, Prize;
Surgical Reports, Prize;
Midwifery, Prize;
Medical Reports, Prize;
Pathology, Prize;
Physical Society's Essay, Prize.
- KIDD (H. G.), U. Norwood.**
w 1881-2. 1st Year Student, 3rd Coll. Prize.
- KNAGGS (R. H. E.), Trinidad, W. Indies.**
w 1875-6. Prosector's Prize.
- LAKE (W. W.), Ilford, Essex.**
1873. Physical Society's 1st Year's Prize.
- LAKE (R.), Dover.**
w 1881-2. Prosector's Prize.
- LANKESTER (H.), Poole, Dorset.**
1850. 1st Year Student, Scholarship;
Descriptive Anatomy, 1st Prize;
Chemistry, Prize.
1851. Physiology, Prize;
Materia Medica, Prize;
Descriptive Anatomy, Hon. Cert.;
Botany, Hon. Cert.;
Medicine, Prize;
Physical Society's Essay, Prize;
Surgery, Hon. Cert.
1852. 3rd Year Student, Scholarship;
Physiology, Hon. Cert.;
Descriptive Anatomy, Hon. Cert.;
Medical Cases, President's Prize;
Medicine, Prize;
Surgery, Prize;
Surgery and Surgical Anatomy
Cheselden Medal;
General Proficiency, Treasurer's
Medal.
1853. Surgical Essay, President's Prize.
- LANKESTER (H. H.), Leicester.**
w. 1880-81. Entrance Science Scholarship.
1st Year Student 2nd Coll.
Prize.
- w 1881-2. 2nd Year Student, The College
Scholarship Two Years.
- LAVER (H.)**
1855. Midwifery, Hon. Cert.
- LAVER (A. H.), Rayleigh.**
1870. 1st Year Student, 3rd Coll. Prize.
1871. 2nd Year Student, 2nd Coll. Prize.
w 1872. 3rd Year Student, 2nd Coll. Prize,
Cheselden Medal.
- LAWSON (R.), Wintham, N.B.**
w 1880-81. 1st Entrance Science Scholarship.
1st Year Student, The Wm. Tite
Scholarship.
- s 1881. 2nd Coll. Prize.
w 1881-2. 2nd Year, 2nd Coll. Prize.
w 1882-3. 3rd Year, 2nd Coll. Prize.
- LAXTON (T. L.), Stamford.**
w 1876-7. 2nd Year Student, Prosector's
Prize.
- LEDGER (M.), London.**
1845. Dresser's Clinical Surgery, Prize.
- LEES (J.),* Wolverhampton.**
1859. 1st Year Student, Hon. Cert.;
3rd Year Student, Hon. Cert.;
Physical Society's Prize.

- LEESON (T.), Snaith, York.**
1847. Medicine, Hon. Cert.;
Surgery, Prize;
Physiology and Anatomy, Hon.
Cert.;
Descriptive and Surgical Anatomy,
Hon. Cert.;
Midwifery, Hon. Cert.
1848. Descriptive and Surgical Anatomy,
Hon. Cert.;
Physiology and Anatomy, Hon.
Cert.;
Medicine, Hon. Cert.;
Midwifery, Prize.
- LE GROS (J.), Jersey.**
1841. Medicine, Hon. Cert.;
Midwifery, 1st Prize.
1845. Clinical Medical Reports, Medal;
Medicine, Hon. Cert.;
Dresser's Clinical Surgery, Prize.
- LEREW (F. W.), Maida Valo.**
s 1876. 1st Year Student, Hon. Cert.
- LITTELJOHN (S. G.), Falmouth, Jamaica.**
1865. 1st Year Student, Hon. Cert.
- LOCOCK (H. S.), Blackheath.**
1848. Descriptive and Surgical Anatomy,
Hon. Cert.;
Physiology and Anatomy, Hon.
Cert.;
Midwifery, Hon. Cert.
1849. Physiology, Hon. Cert.
- LONGSTAFF (G. B.), Wandsworth.**
w 1873-4. 1st Year Student, 2nd Coll. Prize.
s 1874. 1st Coll. Prize;
Physical Society's 1st Year's Prize;
s 1875. 2nd Year Student, 2nd Coll. Prize.
w 1875-6. 3rd Year Student, 1st Coll. Prize.
w 1876-7. 4th Year Student, Mead Medal.
- LUSH (W. H.), Devizes.**
w 1872. 2nd Year Student, Prosector's
Prize.
- LUSH (J. S.), West Lavington.**
s 1873. 1st Year Student, 3rd Coll. Prize.
- MACKENZIE (W. G.), Cambridge.**
w 1882-3. 3rd Year, 3rd Coll. Prize.
- MACMURDO (H. H.), New Broad Street.**
1847. Chemistry, Hon. Cert.
1849. Midwifery, Hon. Cert.
- MANBY (W. G.), Barking, Essex.**
1851. Descriptive Anatomy, Hon. Cert.
- MARCH (H. C.), Newbury.**
1868. 1st Year Student, Treasurer's 2nd
Prize.
1856. 2nd Year Student, Hon. Cert.
1860. 3rd Year Student, Hon. Cert.
- MASON (M. T.), Newington.**
1845. Practical Midwifery, Hon. Cert.
- MAYBURY (A. C.), Frimley, Surrey.**
1865. 3rd Year Student, Hon. Cert.
- MAYBURY (W. A.), Frimley, Surrey.**
1867. 1st Year Student, 3rd Coll. Prize.

* Late Demonstrator of Morbid Anatomy
at St. Thomas's Hospital.

MAYBURY (H. M.), Frimley, Surrey.
1869. 1st Year Student, 2nd Coll. Prize;
1871. 3rd Year Student, 3rd Coll. Prize.

MAYBURY (A. V.), Frimley.
1870. 1st Year Student, 2nd Coll. Prize.
1871. 2nd Year Student, 1st Coll. Prize.
w 1872. 3rd Year Student, 1st Coll. Prize;
Treasurer's Gold Medal.

MAYNARD (J. C. M.)
1855. Midwifery, Hon. Cert.

MEADOWS (H.), Leicester.
1867. 1st Year Student, The William
Tite Scholarship;
Phys. Soc. 1st Year's Prize.
1868. 2nd Year, Tite Scholarship;
Phys. Soc. 2nd Year's Prize.

MILLER (B.), London.
1845. Midwifery, Hon. Cert.;
Practical Midwifery, Prize;
Clinical Medicine, Prize.

MILNE (C. W.), Aberdeen.
1865. 1st Year Student, Hon. Cert.

MITCHELL (J.), Leicester.
1866. 1st Year Student, 2nd Coll. Prize;
Phys. Society's 1st Year's Prize.
1867. 2nd Year Student, 2nd Coll. Prize.
1868. 3rd Year Student, 2nd Coll. Prize.

MONEY (F. J.), Offham, Kent.
1849. Descriptive Anatomy, 2nd Prize;
Chemistry, Prize;
Materia Medica, 1st Prize;
Matriculation Scholarship, Prize;
1st Year Student Scholarship.
1850. Physiology, Prize;
Comparative Anatomy, Prize;
Descriptive Anatomy, Prize;
Medicine, Prize;
Surgery, Hon. Cert.
1851. Descriptive Anatomy, Hon. Cert.;
Midwifery, Prize;
Medicine, Prize;
Physical Society's Essay, Prize;
Surgery, Prize;
Surgery and Surgical Anatomy,
Cheselden Medal;
General Proficiency, Treasurer's
Gold Medal.

MORETON (J. E.), Marton, Cheshire.
1850. 1st Year Student, Scholarship;
Descriptive Anatomy, Hon. Cert.;
Chemistry, Hon. Cert.
1851. Materia Medica, Hon. Cert.;
Botany, Hon. Cert.;
1852. Physiology, Prize;
Descriptive Anatomy, Prize;
Physical Society's Essay, Prize;
Medicine, Prize;
Surgery, Prize;
2nd Year Student, Scholarship.
1853. 3rd Year Student, Scholarship;
Physiology, Prize;
Clinical Medicine, Pres. Prize;
Clinical Medicine, Treas. Prize.
Clinical Medicine, Mr. N. Smith's
Prize;
Descriptive Anatomy, Hon. Cert.;
Midwifery, Hon. Cert.;
Ophthalmic Surgery, Prize;
Medicine, Prize;
Forensic Medicine, Hon. Cert.;
Surgery, Hon. Cert.;

Surgery and Surgical Anatomy;
Cheselden Medal;
Gen. Proficiency, Treas. Medal.
1854. Clinical Med., Dr. Roots' Prize;
Pathology, Hon. Cert.

MORETON (T.), Marton, Cheshire.
1867. 1st Year Student, Treasurer's 2nd
Prize;
Matriculation Examination, Clas-
sics and Mathematics, Prize.
1858. Clinical Medicine, Prize.
1859. 3rd Year Student, Hon. Cert.;
Clinical Medicine, Hon. Cert.

MORGAN (S.), London.
1852. Descriptive Anatomy, Hon. Cert.
1853. Midwifery, Hon. Cert.
1854. Midwifery, Hon. Cert.;
Forensic Medicine, 2nd Prize.

**MORRIS (C. K.), Spalding, Lincoln-
shire.**
w 1875. Prosector's Prize.

MORTON (J.), Holbeach, Lincoln.
1861. 1st Year Student, Hon. Cert.
1862. 2nd Year Student, Hon. Cert.
1863. 3rd Year Student, Hon. Cert.

MOXON (H. M.), Brigham.
1871. Prosector's Prize.

**MUSSON (W. E.), Birkholme, Lin-
coln.**
1850. Matriculation Scholarship, Prize;
Descriptive Anatomy, Hon. Cert.
1851. Physiology, Hon. Cert.;
Comparative Anatomy, Hon. Cert.;
Medicine, Hon. Cert.

NEWBY (C. H.), London.
1870. Prosector's Prize.
NEWSHOLME (A.), Bradford.
w 1875-6. 1st Year Student, 1st Coll. Prize.
w 1876-7. 2nd Year Student, 1st College
Scholarship.
s 1877. Ditto 1st Coll. Prize.
w 1877-8. 3rd Year Student, The "College
Scholarship," 1st Coll. Prize.

**NEWTH (A. H.), Kennington,
Surrey.**
1865. 1st Year Student, Hon. Cert.

NICHOL (R.), Camberwell.
1844. Chemistry, 1st Prize;
Materia Medica, Prize.
1845. Physiology and Anatomy, Hon.
Cert.;
Botany, Prize;
Comparative Anatomy, Prize.

NICHOLSON (F. W.), Putney.
s 1877. 1st Year Student, 3rd Coll. Prize.
w 1877-8. 2nd Year Student, Prosector's
Prize.

NICHOLSON (J. F.),* Brigg, Lincoln.
w 1873. 1st Year Student, 1st Coll. Prize.
s 1873. Ditto 1st Coll. Prize.
w 1874. 2nd Year Student, 1st Coll. Prize.
s 1874. Ditto 1st Coll. Prize.
w 1875. 3rd Year Student, 1st Coll. Prize;
Cheselden Medal;
Mead Medal;
Treasurer's Gold Medal.

* Physician to the Hull General In-
firmmary.

O'CALLAGHAN (C.), Killarney.

1847. Chemistry, Hon. Cert.;
Materia Medica, Prize.
1848. Medical Reports, President's Prize;
Physiology and Anatomy, Hon.
Cert.;
Midwifery, Hon. Cert.;
Practical Midwifery, Prize;
Forensic Medicine, Prize;
Physical Society's Essay, Prize.
1849. Physical Society's Essay, Treas-
urer's Prize;
Resident Accoucheur's Report,
Prize.

ORANGE (W.),* Torquay.

1854. Midwifery, Hon. Cert.
1856. Midwifery, Hon. Cert.

ORD (G. R.), Brixton.

1858. Midwifery, Hon. Cert.

ORD (W. M.),† Brixton.

1853. Matriculation Examination,
Scholarship;
1st Year Student, Scholarship;
Descriptive Anatomy, Prize;
Chemistry, Prize.
1854. 2nd Year Student, Scholarship;
Medicine, Prize;
Materia Medica, Prize;
Descriptive Anatomy, Hon. Cert.;
Midwifery, Hon. Cert.;
Surgery, Hon. Cert.;
Physiology, Prize.
1855. 3rd Year Student, Scholarship;
Surgery and Surgical Anatomy,
Cheselden Medal;
Forensic Medicine, Prize;
Pathology, Prize;
Practical Chemistry, Prize;
Medicine, Hon. Cert.;
Descriptive Anatomy, Hon. Cert.;
Physiology, Prize;
General Proficiency, Treasurer's
Medal.
1856. Registrar, Prize.

OSBORN (S.), Brixton.

1870. Physical Society's 2nd Year's Prize.

UGHTON (T.), London.

1858. Clinical Medical Assistant, 1st Prize.

OZANNE (C. H.), Guernsey.

1844. Descriptive and Surgical Anatomy,
Prize.

OZANNE (J.), Guernsey.

1843. Physiology and Anatomy, Chesel-
den Medal;
Comparative Anatomy, Hon. Cert.
1844. Medicine, Prize;
Midwifery, 2nd Prize;
Surgery, Hon. Cert.;
Physical Society's Essay, Prize;
Clinical Surgical Reports, Silver
Medal.

PAGE (W. H.), Cheltenham.

- s 1872. 1st Year Student, Hon. Cert.
w 1873. 3rd Coll. Prize.

* Resident Medical Superintendent at
Broadmoor Asylum.

† Physician to, and Joint Lecturer on
Medicine, late a Lecturer on Physiology
and Practical Physiology at St. Thomas's
Hospital. Late Lecturer on Comparative
Anatomy.

**PALMER (M. H. C.), Newbury,
Berks.**

1870. Physical Society's 2nd Year's Prize.
1872. Physical Society's 3rd Year's Prize.

PARSONS (F.).

- w 1882-3. 2nd Year, Prosector's Prize.

PEARCE (G.), Salisbury.

1860. 1st Year Student, 2nd Coll. Prize.
1861. 2nd Year Student, 2nd Coll. Prize.

PEEK (F. H.), Diss, Norfolk.

- s 1872. 1st Year Student, 1st Coll. Prize.
w 1873. The William Tite Scholarship.
w 1874. 2nd Year Wm. Tite Scholarship.

PENBERTHY (J.), Redruth.

1854. 1st Year Student, Scholarship;
Descriptive Anatomy, Prize;
Chemistry, Hon. Cert.
1855. 2nd Year Student, Scholarship;
Midwifery, Hon. Cert.;
Botany, Prize;
Descriptive Anatomy, Hon. Cert.

PERN (A.), Winchester, Hampshire.

1865. 1st Year Student, Hon. Cert.

PHILLIPS (G. G.), Newcastle Emlyn.

1859. 2nd Year Student, Hon. Cert.
1860. 3rd Year Student, 3rd Coll. Prize.

PICKFORD (J. K.), Brixton.

- w 1872. 1st Year Student, 3rd Coll. Prize.
s 1872. Hon. Cert.

PIKE (W. R.), Leicester.

1868. Physical Society's 1st Year's Prize.

PIKE (J. B.), Leicester.

- w 1872. 2nd Year Student, Hon. Cert.
w 1873. 3rd Year Student, Hon. Cert.

FLOWMAN (R.), Bridgewater, Somst.

1862. 1st Year Student, Hon. Cert.
1863. 2nd Year Student, Hon. Cert.
1865. 3rd Year Student, Hon. Cert.

POLLARD (F.), Taunton, Somerset.

1865. 1st Year Student, 2nd Coll. Prize.
1866. 2nd Year Student, 2nd Coll. Prize;
Physical Society's 2nd Year's Prize.
1868. 3rd Year Student, 1st Coll. Prize;
Physical Society's 3rd Year's Prize;
Cheselden Medal.

POTTER (H. P.), Denmark Hill.

- w 1872. 1st Year Student, Hon. Cert.
s 1872. 3rd College Prize.
w 1873. 2nd Year Student, 2nd Coll. Prize;
Prosector's Prize.
w 1874. 3rd Year Student, 1st Coll. Prize;
Cheselden Medal;
Hon. Cert. for Gen. Proficiency.
1875. Grainger Testimonial Prize.

POYNDER (G. F.), Clapham.

1872. Phys. Society's 1st Year's Prize.
1874. Phys. Society's 3rd Year's Prize.

PURKISS (A.), Kennington.

- w 1875-6. 1st Year Student, Hon. Cert.
s 1876. Hon. Cert.

PURVIS (J. P.), Blackheath.

1861. 1st Year's Student, Hon. Cert.;
Matriculation Examination, Hon.
Cert.
1862. 2nd Year Student, Hon. Cert.
1863. 3rd Year Student, Hon. Cert.

RAINBOW (F.), Lower Norwood.

1864. 1st Year Student, Hon. Cert.
 1865. 2nd Year Student, 3rd Coll. Prize.
 1866. 3rd Year Student, 2nd Coll. Prize.

RAYNER (H.),* Hythe, Kent.

1862. Matriculation Examination—Physics
 and Natural History, Hon. Cert.;
 1st Year Student, 1st Coll. Prize.
 1863. 2nd Year Student, 1st Coll. Prize.
 1864. 3rd Year Student, Hon. Cert.;
 Hon. Cert. for the Cheselden Medal.

RELTON (B.), Ealing.

- 18-0. 2nd Entrance Science Scholarship.

RICHARDSON (C. S.), Greenwich.

1851. Surgery, Hon. Cert.
 1852. Midwifery, Prize.

RICHARDSON (L.), Greenwich.

1848. General Pathology, Prize.

RIDGE (J. J.), Horsleydown.

1864. 1st Year Student, The William
 Tite Scholarship.
 1865. 2nd Year of Tite's Scholarship;
 Physical Society's 2nd Year's Prize;
 Prosector's Prize.
 1866. The Grainger Testimonial Prize.
 1868. 3rd Year Tite Scholarship;
 Hon. Cert. for Proficiency in
 Surgery and Surgical Anatomy;
 Treasurer's Gold Medal.

ROBINSON (H. B.), L. Norwood.

- s 1831. 2nd Year Student, 1st Coll. Prize.

ROE (A. D.), Eccles.

- w 1880-81. 3rd Year Student, 2nd Coll.
 Prize.

ROGERS (R. S.), Greenwich.

1843. Midwifery, First Prize;
 Clinical Medicine, Hon. Cert.

ROSSITER (G. F.), Taunton.

1871. 1st Year Student, 1st Coll. Prize.
 w 1872. 2nd Year Student, 2nd Coll. Prize.
 s 1872. 1st Coll. Prize.
 w 1873. 3rd Year Student, 3rd Coll. Prize;
 Cheselden Medal;
 Treasurer's Gold Medal.

ROUSE (R. E.), Woodbridge).

- s 1880. 2nd Year Student, 3rd College Prize.

RUDALL (J. T.), Crediton, Devon.

1853. Physiology, Hon. Cert.;
 Midwifery, Hon. Cert.;
 Medicine, Hon. Cert.;
 Surgery, Hon. Cert.

SANDFORD (H. C.), Brixton.

- w 1872. 1st Year Student, 1st Coll. Prize.
 s 1872. 2nd College Prize.
 w 1873. 2nd Year Student, 1st Coll. Prize.
 s 1873. 3rd College Prize.
 w 1874. 3rd Year Student, 2nd Coll. Prize;
 Treasurer's Gold Medal.

SANEYOSHI (Y.), Tokio, Japan.

- w 1881-2. 3rd Year Student, 1st Coll. Prize.

SANKEY (G. G.), Ashford, Kent.

1864. 3rd Year Student, 3rd Coll. Prize.

SAUNDERS (G. M. C.), London.

1843. Midwifery, Hon. Cert.

SAUNDERS (H. W.), London.

1867. 1st Year Student, 2nd Coll. Prize.
 1868. Prosector's Prize.
 1869. 3rd Year Student, 1st Coll. Prize;
 Treasurer's Gold Medal;
 Physical Society's 3rd Year's Prize.

SAUNDERS (W. S.), Camden Town.

1844. Midwifery, Hon. Cert.
 1845. Medicine, Prize;
 Midwifery, Prize;
 Clinical Medicine, Prize.

SAVILL (T. D.), Brixton.

- w 1875-6. 2nd Entrance Science Scholarship;
 1st Year Student, The William
 Tite Scholarship.
 s 1876. 3rd College Prize.
 w 1876-7. 2nd Year Student, Hon. Cert.
 s 1877. 2nd Year Student, 2nd Coll. Prize.

SCOTT (R. J.), Omagh, Tyrone.

1861. 1st Year Student, Hon. Cert.

SCUTT (T.), Bere Regis.

- w 1882-3. 3rd Year Student, 1st Coll. Prize.

SEDGWICK (J.), Boroughbridge.

1854. Descriptive Anatomy, Hon. Cert.
 1865. Surgery, Hon. Cert.;
 Midwifery, Hon. Cert.

SEDGWICK (L. W.), Boroughbridge.

1848. Descriptive and Surgical Anatomy,
 Prize;
 Physiology and Anatomy, Prize;
 Medicine, Hon. Cert.;
 Midwifery Prize;
 Surgery, Prize;
 1849. Physiology, 1st Prize;
 Midwifery, 1st Prize;
 Surgery, Prize;
 Medicine, 1st Prize;
 General Proficiency, Treasurer's
 Medal.

SERGEANT (E.), Preston.

1870. 3rd Year Student, 3rd Coll. Prize;
 Cheselden Medal.

SEWELL (E.), Little Oakley.

1848. Physiology and Anatomy, Hon.
 Cert.

SHARKEY (S. J.),† Galway.

1874. Physical Society's 2nd Year's Prize.

SHAW (J.), Clapham Road.

- w 1874-5. 1st Year Student, 1st Coll. Prize.
 s 1875. 1st Coll. Prize.
 w 1875-6. 2nd Year Student, 1st Coll. Prize.

SHEA (H. G.), London.

1860. 1st Year Student, Hon. Cert.
 1861. 2nd Year Student, Hon. Cert.
 1862. 3rd Year Student, 2nd Coll. Prize.

SHEA (J.), London.

1855. Midwifery, Hon. Cert.
 1859. Midwifery, Hon. Cert.

* Medical Superintendent Hanwell Asylum, and Lecturer on Psychology at St. Thomas's Hospital. Late Lecturer on Psychology at Middlesex Hospital.

† Assist.-Physician to and Joint Lecturer on Pathological Anatomy at St. Thomas's Hospital.

SHEPPARD (C. E.), Kensington.
 w 1873-4. 1st Year Student, 1st Coll. Prize.
 s 1874. 1st Year Student, 2nd Coll. Prize.
 w 1874-5. 2nd Year Student, 1st Coll. Prize.
 s 1875. 1st Coll. Prize.
 w 1875-6. 3rd Year Student, 2nd Coll. Prize;
 Physical Society's 2nd Year's Prize.
 w 1876-7. 4th Year Student, the Treasurer's
 Gold Medal.
 w 1877-8. Solly Medal and Prize, £20.
 Paper published in Hosp.
 Reports, Vol. VIII.

SHEPPARD (W. J.), Kensington.
 w. 1880-81. 3rd Year Student, 3rd Coll.
 Prize.

w 1881-2. The Treasurer's Gold Medal.

**SHERRINGTON (C. S.), Caius Coll.,
 Cambs.**

w 1882-3. 6th Year, Grainger Testimonial
 Prize.

**SHIRTLIFF (E. D.), Kingston-on-
 Thames.**

w 1882-3. 2nd Entrance Science Scholarship.

SIDDALL (J. B.),* Morton, Derby.

1862. 1st Year Student, Hon. Cert.

1863. 2nd Year Student, Hon. Cert.

1864. 3rd Year Student, Hon. Cert.;
 Hon. Cert. for the Cheselden Medal.

SIMMONS (H. B. M.), West Indies.
 1849. Descriptive Anatomy, Hon. Cert.

SIMON (M. F.), Blackheath.

1866. 1st Year Student, 1st Coll. Prize.

1869. 3rd Year Student, 3rd Coll. Prize;

Prosecutor's Prize;

Prize and Hon. Cert. for Surgery
 and Surgical Anatomy.

SIMS (G. S.), Derby.

s 1881. 1st Year Student, 3rd Coll. Prize.

SISSONS (W. H.), Hull.

1858. Matriculation Examination—
 Physics, &c., Prize.

1859. 2nd Year Student, Hon. Cert.;

Clinical Medicine, Prize;

Physical Society's Essay, Prize.

1860. 3rd Year Student, 2nd Coll. Prize;
 Physical Society's Prize.

SKINNER (W.), Stockton-on-Tees.

1848. Botany, Hon. Cert.;

Materia Medica, Hon. Cert.

SKIPPER (J.), Dalston, London.

1852. Midwifery, Hon. Cert.

SKIPTON (S. S.), East Indies.

1851. Midwifery, Hon. Cert.

SLATER (J. S.), Bath.

1868. 1st Year Student, 1st Coll. Prize.

1869. Physical Society's 2nd Year's Prize.

1870. 3rd Year Student, 2nd Coll. Prize;
 Treasurer's Gold Medal.

SLAUGHTER (C. H.), Farningham.

1855. Midwifery, Hon. Cert.

SLAUGHTER (G. M.), Farningham.

1854. Midwifery, Hon. Cert.

SMITH (H. U.), Reading.

w 1876-7. 4th Year Student, Cheselden
 Medal.

SMITH (R. P.),† Belvedere.

s 1876. 2nd Year Student, 2nd College
 Prize.

SMYTH (H. G.), Brondesbury.

w 1882-3. 1st Year Student, 3rd Coll. Prize.

SNAITH (F.), Boston, Lincolnshire.

1864. 3rd Year Student, Hon. Cert.

SPRAKELING (R. J.), Canterbury.

1855. Midwifery, Hon. Cert.

1856. 2nd Year Student, Hon. Cert.;

Clinical Medicine, Prize.

STADDON (J. H.), London.

1858. Clinical Medicine, Prize.

1859. Clinical Medicine, Prize.

**STEPHENS (J. N.), Walton-on-
 Thames.**

w 1876-7. Physical Society's 1st Year's Prize.

STEPHENS (S. Sanders), Taunton.

1863. Physical Society's 2nd Year's Prize.

STODDART (F. W.), Bristol.

w 1877-8. 1st Year Student, 1st Coll. Prize.

STONE (W. H.),‡ London.

1854. Matriculation Examination—
 Scholarship;

1st Year Student, Scholarship;

Descriptive Anatomy, Hon. Cert.;

Botany, Prize;

Chemistry, Prize.

1855. 2nd Year Student, Scholarship;

Forensic Medicine, Prize;

Physical Society's Essay, Prize;

Practical Chemistry, Prize;

Medicine, Prize;

Descriptive Anatomy, Hon. Cert.;

Materia Medica, Prize;

Physiology, Prize;

Clinical Medicine, Mr. N. Smith's
 Prize.

1856. Clinical Medical Prize;

General Proficiency, Treasurer's
 Medal.

**SUMMERHAYES (H.), Crewkerne,
 Somersetshire.**

1861. Matriculation Examination—

Classics and Mathematics,

President's Prize;

Modern Languages, &c., College

Prize;

Physics and Natural History,

College Prize;

The William Tite Scholarship.

1862. 2nd Year Tite's Scholarship.

1863. 3rd Year Tite's Scholarship;

Treasurer's Gold Medal.

† Resident Assistant-Physician to St.
 Thomas's Hospital.

‡ Physician to, and Lecturer on Physics
 and Natural Philosophy, and on Materia
 Medica at St. Thomas's Hospital; late
 Assistant-Physician to the Hospital for
 Consumption and Diseases of the Chest,
 Brompton.

* Late Physician to H.B.M. Legation,
 Japan.

SUMMERHAYES (W.), Crewkerne, Somersetshire.

1856. Matriculation Examination—Classics and Mathematics, Hon. Cert.;
Matriculation Examination—Modern Languages, Prize.

SUTCLIFF (E.), Camberwell.

1861. 1st Year, 3rd College Prize;
Matriculation Examination—Hon. Cert.
1863. 3rd Year Student, 3rd Coll. Prize.

SUTCLIFFE (J.), Ashton-under-Lyne.

1869. Prosector's Prize.

SWALLOW (J. D.), Reading.

1861. 2nd Year Student, Hon. Cert.

SWEETING (R. B.), Reading.

1853. 1st Year Student, Scholarship;
Descriptive Anatomy, Hon. Cert.;
Chemistry, Hon. Cert.
1854. 2nd Year Student, Scholarship;
Midwifery, Prize.
1855. 3rd Year Student, Scholarship;
Midwifery, Hon. Cert.;
Clinical Medicine, Treasurer's Prize.

SWEETING (T.), Reading.

1855. Midwifery, Hon. Cert.

TAKAKI (Kanchiro), Kasumigaseki, Tokei, Japan.

- w 1875-6. 1st Year Student, 3rd Coll. Prize.
s 1876. 2nd College Prize.
w 1876-7. 2nd Yr. Student, 1st Coll. Prize.
s 1877. 2nd Year Student, 3rd Coll. Prize.
w 1877-8. 3rd Year Student, 2nd Coll. Prize.
w 1878-9. 4th Year Student;
"The Cheselden Medal;"
The Treasurer's Gold Medal.

TALBOT (G. T.), Kidderminster.

1848. Medical Reports, Dr. Roots' Prize.

TAYLOR (C. M.), Wrawby, Brigg.

1871. 1st Year Student, 2nd Coll. Prize.
w 1872. 2nd Year Student, 1st Coll. Prize.
w 1873. 3rd Year Student, 1st Coll. Prize;
Surgery and Surgical Anatomy, Hon. Cert.

TAYLOR (S.), Burton-on-Trent.

- w 1872. 3rd Year Student, Hon. Cert.

TAYLOR (S. J.), Grantham.

- s 1875. 1st Year Student, Hon. Cert.
w 1875-6. 2nd Year Student, The Musgrove Scholarship.
w 1876-7. 3rd Year Student, 2nd Year Musgrove Scholarship, and 1st College Prize.
w 1877-8. The Mead Medal;
The Treasurer's Gold Medal.

TEANBY (F. W.), Turnham Green.

1851. Practical Midwifery, Prize.
1852. Clinical Medicine, Junior Prize;
Midwifery, Hon. Cert.

THOMAS (L. M.), Camberwell.

1866. 1st Year Student, 3rd Coll. Prize.
1867. 2nd Year Student, 3rd Coll. Prize.
1869. 3rd Year Student, 2nd Coll. Prize;
Cheselden Medal.

THOMAS (W. L.), Neath, Glamorgan.

1845. Chemistry, Prize;
Materia Medica, Prize.
1847. Medicine, Hon. Cert.;
Physiology and Anatomy, Prize;
Physical Society's Essay, Prize.

THOMPSON (F. H.), Tenbury.

1870. Prosector's Prize.

THURICUM (G. D.), Kensington.

- w 1878-9. Physical Society's 2nd Year's Prize.

TIMOTHY (P. V.), London.

1851. Practical Midwifery, Prize;
Midwifery, Hon. Cert.

TODD (A. J. M.), Gravesend.

- w 1863. 1st Year Student, 2nd Coll. Prize.
w 1864. Prosector's Prize.

TOMSON (K.), Luton, Beds.

1842. Materia Medica Prize.
1843. Medicine, Prize;
Clinical Medicine, Hon. Cert.

TOMSON (W. B.), Luton, Beds.

- w 1879-80. 1st Year Student, 2nd Coll. Prize.
s 1880. 1st Year Student, 2nd Coll. Prize.
w 1880-81. 2nd Year Student, The Musgrove Scholarship, Prosector's Prize.
w 1881-2. 3rd Year Student, 2nd Coll. Prize;
2nd Tenure of Musgrove Scholarship.
s 1882. 2nd Coll. Prize.
w 1882-3. Treasurer's Gold Medal.

TOTSUKA (K.), Tokei, Japan.

- s 1882. 1st Year Student, 2nd Coll. Prize.
w 1882-3. 2nd Year Student, $\frac{1}{2}$ Musgrove Scholarship and 1st Coll. Prize combined.

TREND (H. G.), Bridgewater.

1853. Practical Midwifery, Prize;
Midwifery, Hon. Cert.
1854. Midwifery, Hon. Cert.;
Clinical Medicine, Treasurer's Prize.

TREVES (W. K.), Dorchester.

1863. Matriculation Examination—
Physics and Natural History, Hon. Cert.; and
Modern Languages and Modern History, College Prize and Hon. Cert.;
1st Year Student, Hon. Cert.
1865. 3rd Year Student, 2nd Coll. Prize;
Prosector's Prize.

TYRREL (W.), Richmond.

1851. Descriptive Anatomy, Hon. Cert.
1852. Medicine, Hon. Cert.;
Surgery, Hon. Cert.
1853. Forensic Medicine, Hon. Cert.;
Ophthalmic Essay, Mr. Dixon's Prize.
1854. Surgical Reports, President's Prize.

VARDY (J. L.), London.

1854. Midwifery, Hon. Cert.
1855. Practical Midwifery, Prize.

VERDON (H. W.), Eccles.

- 2nd Year Student, Hon. Cert.

WAGSTAFFE (W. W.),* Kennington.

1862. Matriculation Examination—Classics and Mathematics, President's Prize.
 Physics and Natural History, College Prize;
 Modern Languages, &c., College Prize;
 1st Year Student, Treasurer's Prize;
 1863. 2nd Year Student, 1st Coll. Prize.
 1864. 3rd Year Student, 1st Coll. Prize;
 Physical Society's 3rd Year's Prize;
 Cheselden Medal;
 Treasurer's Gold Medal.

WALKER (R.), Kendal.

1854. Descriptive Anatomy, Hon. Cert.;
 Midwifery, Hon. Cert.
 1855. Midwifery, Hon. Cert.

WALLER (A.), Islington.

1864. 1st Year Student, 1st Coll. Prize.
 1865. 2nd Year Student, 1st Coll. Prize.
 1866. 3rd Year Student, 1st Coll. Prize;
 Physical Society's 3rd Year's Prize;
 Treasurer's Gold Medal.

WALLER (C. B.), London.

1860. 2nd Year Student, Hon. Cert.

WARD (F. H.),† Scarborough.

1863. 1st Year Student, Treas. Prize.
 1864. 2nd Year Student, 1st Coll. Prize;
 Physical Soc. 2nd Year's Prize.
 1865. 3rd Year Student, 1st Coll. Prize;
 Physical Soc. 3rd Year's Prize;
 Cheselden Medal;
 Treasurer's Gold Medal.

WATSON (F.), Nottingham.

1859. 1st Year Student, Hon. Cert.;
 Matriculation Examination—
 Physics, &c., Prize.

WAY (F. W.), Fratton, Portsmouth.

1853. Descriptive Anatomy, Hon. Cert.;
 Chemistry, Hon. Cert.;
 1854. Midwifery, Hon. Cert.;
 Surgery, Hon. Cert.

WAY (J. P.), Portsmouth.

1861. 1st Year, Hon. Cert.

WEBBER (W. W.), Crewkerne.

- w 1876-7. 1st Year Student, 3rd Coll. Prize.

WEBSTER (H.), Dulwich.

1851. Matriculation Sch., Hon. Cert.;
 Descriptive Anatomy, Hon. Cert.
 1852. Botany, Hon. Cert.
 1853. Midwifery, Hon. Cert.

WEEKES (F. H.), Southampton.

- w 1873-4. 1st Year Student, 3rd Coll. Prize.
 s 1874. 3rd Coll. Prize.
 w 1874-5. 2nd Year Student, 2nd Coll. Prize.
 s 1875. 3rd Coll. Prize.
 w 1875-6. 3rd Year Student, 3rd Coll. Prize.

* Assistant Surgeon to, and late Joint Lecturer on Anatomy at, St. Thomas's Hospital. Late Assistant Demonstrator of Anatomy and Surgical Registrar.

† Assistant Medical Officer, Wandsworth Lunatic Asylum.

WELLS (A. E.), Brixton.

- w 1877-8. 1st Year Student, 2nd Entrance Science Scholarship.

WEST (J. F.)*

1853. Midwifery, Hon. Cert.
 1854. Forensic Medicine, Hon. Cert.;
 Pathology, Hon. Cert.
 1855. Ophthalmic Reports, Prize.

WHEATON (F. D. W.), Honiton.

1845. Practical Midwifery, Hon. Cert.

WHITEHEAD (J.), Preston.

1861. 1st Year, Hon. Cert.
 1862. 2nd Year Student, 2nd Coll. Prize.
 1863. 3rd Year Student, 2nd Coll. Prize.

WILES (J.), Hitchin, Herts.

1850. Physiology, Hon. Cert.
 1851. (Accoucheur) Midwifery, Prize.

WILLIAMS (H.), Longley, near Gloucester.

1868. 1st Year Student, 2nd Coll. Prize.
 1869. 2nd Year Student, 3rd Coll. Prize.

WILLIAMS (J.), Westerleigh, Bristol.

1855. 1st Year Student, Scholarship;
 Midwifery Prize;
 Botany, Prize;
 Chemistry, Hon. Cert.;
 Descriptive Anatomy, Prize;
 Materia Medica, Hon. Cert.
 1856. 2nd Year Student, Treas. 1st Prize.
 1857. 3rd Year Student, Hon. Cert.;
 General Proficiency, Treasurer's Medal.

WILLIAMS (J.), Doncaster.

1858. 1st Year Student, Hon. Cert.
 1859. 2nd Year Student, Hon. Cert.;
 Clinical Medicine, Prize.
 1860. 3rd Year Student, Hon. Cert.

WILLIAMS (P. H.), Monmouth.

- s 1872. 1st Year Student, Hon. Cert.

WILLIAMS (P. M. G.), Newcastle Emlyn.

1864. Practical Midwifery, Prize.

WILLIAMS (R. M.), Beaumaris.

1880. 1st Entrance Science Scholarship.

WILLIAMS (W. R.),† Nottingham.

1856. Matriculation Examination in
 Classics, Mathematics, Hon. Cert.

WILLIAMSON (R. J.), Ripon.

- w 1876-7. 1st Entrance Sc. Scholarship.

WITHERBY (W. H.), Croydon.

1858. Matriculation Examination in
 Modern Languages, Prize.

‡ Surgeon to Queen's Hospital, and Professor of Clinical Surgery at Queen's College, Birmingham.

§ One of H. M. Commissioners in Lunacy, late Resident Physician to Bethlehem Royal Hospital; late Lecturer on Mental Diseases at St. Thomas's Hospital.

WOAKES (E.), Luton, Beds.

1856. 1st Year Student, Hon. Cert.
 1857. 2nd Year Student, 2nd Prize;
 Clinical Medical Prize.
 1858. Essay on Neuralgia, Mr. N. Smith's
 Prize;
 Surgical and Medical Anatomy,
 Cheselden Medal.

WOOD (G. J.), London.

1863. Descriptive Anatomy, Hon. Cert.

**WOOD (R. H.), Loughborough,
Leicester.**

1854. Descriptive Anatomy, Hon. Cert.
 1855. Surgery, Hon. Cert.;
 Midwifery, Prize;
 Medicine, Hon. Cert.;
 Descriptive Anatomy, Prize;
 Physiology, Hon. Cert.
 1856. Physical Society's Essay, Prize.

WOODHOUSE (T. J.), London.

1855. Chemistry, Hon. Cert.;
 Materia Medica, Hon. Cert.

WOODMAN (W. E.), Camberwell.

- s 1875. 1st Year Student, 2nd Coll. Prize.

WOTTON (H. G.)

1855. Midwifery, Hon. Cert.
 1856. Midwifery, Hon. Cert.

WRENCH (E. M.), Cornhill.

1851. Descriptive Anatomy, Hon. Cert.;
 Physical Society's Essay, Treas-
 urer's 1st Year's Prize;
 1852. Physiology, Hon. Cert.

**WYMAN (W. S.), Kettering, North-
hampton.**

1852. Matriculation Examination
 Scholarship.

All old Students of St. Thomas's Hospital are requested to send their *present* addresses to *St. Thomas's Hospital, Albert Embankment, Westminster Bridge, S.E.*

